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Thomas Deissinger, Vera Braun (Eds.)

Improving teacher education for applied learning in the field of VET

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Thomas Deissinger, Vera Braun

Introduction

Objectives and Structure of the Erasmus+ Project ITE-VET

In the field of vocational education and training (VET) quality has become one of the most relevant issues. As stated by the European Council, “the knowledge, skills and commitment of teachers, as well as the quality of school leadership, are the most important factors in achieving high quality educational outcomes” (European Council 2009, p. 2). Therefore, besides regulation patterns, curricula that fit the demand by labour markets, and reliable and efficient organisations for the delivery of VET, one crucial “input variable” is the professionalization, the professional status and the pedagogical and subject-specific competences of teachers working in the field of VET. For the quality of teacher education – mostly carried out in higher education institutions, such as universities or pedagogical academies – the mode in which teachers are trained has become more and more complex since teachers need to be (1) experts in their vocational field or discipline, e. g. Economics and Business, (2) pedagogical/didactical experts who have a broad understanding of their function and who know how to teach effectively; and (3) they also need to know what young people who enter the teacher education courses have to expect when they start their career (Kell, 2011, p. 444; Grollmann/Bauer, 2008). This broad motivation is the basic starting point of our project which deals with the question how “applied learning” of teacher education students can meet these requirements, i. e. in particular helping them to promote this “applied learning” among vocational students within the context of their future profession. Hence, “applied learning” had a double meaning in the framework of the project.

The focus has been on Ukrainian institutions dealing with teacher education in the field of VET. The reason for this is manifold:

1. According to our pre-studies for the proposal we learnt that Ukrainian teachers have a low reputation (Koshmanova/Ravchyna, 2008, p. 148), have low salaries (Zinser, 2015, p. 694), and that teacher education students avoid the courses or drop out of courses since they anticipate better career opportunities outside schools/colleges (Shchudlo, 2012). So there has been a “social value” dimension in this project. This also implies that there is normally high fluctuation among the teaching staff in the vocational sector in this post-Soviet country.
2. It seems that in Ukrainian universities pedagogy and didactics are still under-represented as disciplines besides the subject fields future teachers study. So there is a “discipline” dimension in this project. Most future teachers are obviously good experts in their discipline field but not didactically trained specialists. Also, course structures in universities are mostly heterogeneous and sometimes there exist different curricula/schemes for this group of students even within one institution. In some curricula elements are included which have no direct pedagogical relevance (Melnyk, 2017).
3. In terms of teaching methods, Ukrainian universities have indeed recently developed a more substantial awareness of what teacher education students need and that they have to become competent in this field in particular. However, it seems that didactical innovations form a special field of interest from the perspective of teacher education institutions. We have called this the “relevance” dimension of our project. It focusses on the competence of future teachers to master classroom situations and conduct lessons with students.

An even more fundamental and general problem seems to be weak correspondence of teacher education in universities with the specificities of vocational activities in the employment sector. In contrast to a growing awareness of discipline-specific innovations (taking shape in the university class room), there are hardly links with the world of work for which young people should be trained. Above all, there seems to be a lack in the organisation of study programmes for VET teachers that do pay close attention to these links, e. g. by prescribing and/or offering internships and structural links in curricula between the world of work and the university, but also with schools/colleges where future teachers are supposed to be employed after graduation (e. g. career and technical

education schools, higher vocational schools, vocational lyceums) (see Prytomanov/Kolyshko/Garmash in this book). This “relevance dimension” has been fixed as a reform perspective in the recently passed new Ukrainian Law of Education (EACEA, 2010, p. 2) and also in the National Strategy of Education Development by 2021 (Verkhovna Rada, 2013), with a number of activities prescribed to make the education system as a whole more functional and efficient. This also means that university curricula in Ukraine have to be developed further, which means beyond the formal reforms that have already taken place – e. g. in the wake of the Bologna process and with the introduction of the ECTS system. In particular, non-academic work experience in companies for future teachers ought to become a natural part of VET teacher education courses.

The project consisted of three EU partner universities and five Ukrainian programme institutions (three Ukrainian higher education institutions, one VET research institution and a VET counselling and development body with numerous contacts to the employment sector). The project issues were embedded in a broader approach taken by other EU projects, e. g. such as BUSEEG (Vienna University of Economics and Business, AT), to strengthen links between higher education, and hereby teacher education/training in particular, and the employment sector. Therefore, we named our project “Improving Teacher Education for Applied Learning”. This title has two connotations: It marks the importance to make university education in this field more relevant for the “outside world”, and it helps to underlay VET in schools/colleges with a clear practice-oriented perspective. This requires a professional structure of teacher education programmes in the field of initial teacher education. Both connotations, being overall objectives at the same time, also allude to a clear European perspective articulated by the European Council in 2009 already when stating, that “there is considerable national and international research evidence to show, however, that structured programmes of support for all new teachers” (European Council, 2009, p. 2) can lead to better practice of teacher education and can help make the profession more attractive to young people.

Our project preparation started in summer 2015 by establishing contacts with the Vienna University of Economics and Business (WU) and Kiev National Economic University (KNEU), which both were partners of the consortium leader in the Tempus Project BUSEEG (2013–2016). In

November 2015, we held a seminar in Konstanz which was attended by our potential partners from Vienna (WU), Kiev (KNEU) and Ivano-Frankivsk (PNU). The Ministry of Science, Research and Arts of the federal state of Baden-Wuerttemberg (Germany) funded the preparation of the project in 2015, including the workshop, and preparatory journeys to Vienna and Kiev. At the seminar in November 2015, the objectives of the project were specified after consultations with potential further partners in Ukraine.

The consortium consisted of three EU partners with a long-established expertise in VET teacher education. Both the University of Konstanz and the University of Economics and Business in Vienna offer teacher education for future teachers in commercial high schools and part-time vocational schools. The University of Valencia also runs a master programme for future secondary school and VET teachers.

The Ukrainian universities in the consortium are leading institutions both in the field of economics and business and in the field of teacher education for colleges where young people are trained to become competent specialists in various sectors of the economy.

The project came up with the following issues which were defined as working packages in the context of the EU project guidelines. These issues also represent the major contents and arguments in the following chapters of this book:

- Ukrainian VET teacher education and VET system and analysis of their needs
- Didactical input from EU countries on modern teaching
- Revision of course programmes and curricula (pedagogical part)
- Implementation of new forms of practice-orientation.

We would like to thank the EU for financing this project, all involved institutions for their hospitality and support in the respective European and Ukrainian cities. A special thank you also to the student assistants of the University of Konstanz, above all Elena Wipfler and Clemens Hofmann, for their commitment to the project, and Christine Schmeh for administrative support in the handling of the project finances as well as Marc Hoepfer for his assistance in legal questions. Last but not least we would like to thank the project's critical friend Prof. Philipp Gonon (University of Zurich) and all experts attending the workshops and giving important inputs on the topic for their time and efforts in the project.

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LEARNING SKILLS IN VET TEACHER EDUCATION

Philipp Gonon

Learning Skills

Where, when, and how?

1 Introductory remarks

Where do skills have to be learned? Is it really possible to give a general answer to this question? Obviously not. It really depends on circumstances, on the skills demanded, on the traditions of learning, on possibilities, resources, and so on.

So I cannot promise to give a general answer in this position paper to questions like where skills should be learned or which way is more efficient. As is often the case in pedagogy, not all pupils or apprentices prefer the same kind of teaching and learning. However, what I can do in this paper is show different ways of learning skills and knowledge. This includes a section on the question of where things should be learned, another about the timing of learning, and a last one about how to learn. My main argument is that mixed forms and different solutions have evolved out of debates like this (Ainley/Rainbird 1999).

2 Learning skills: Where? Workplace or school?

The question of 'where to learn' is one of the opposition of school and life or school and work. Seneca's often quoted proverb 'non scholae sed vitae discimus' already reminds us of this very old opposition.

A historical approach shows clearly that the traditional place of learning is 'life' and everyday work (Evans et al. 2002). In everyday life we learn when the occasion arises. It was traditionally only possible to master certain crafts through long-term commitment. But there was no question about the fact that things should be learned in the place where they are typically done: Household tasks are best learned in a household, swimming in the water. So the traditional concept was to learn skills for

Vocational purposes at the workplace and to learn skills for academic professions at schools (Bierhoff/Prais 1993).

However, things are not as clear as they seem to be at first glance. You perform better at sports if you also know more about theoretical aspects of movement. If you try to apply this in practice and manage your cooking as part of your household tasks, it is definitely better to have broad knowledge about different meals.

The acquisition of knowledge and training works better in specific and specialized surroundings. This concept was valuable not only for academic professions but also for vocational ones. Learning skills for everything from performing arts to watchmaking relied on school-based knowledge and skills. In France, the concept of vocational schools, so called 'ateliers publiques', rose as an alternative to traditional workplace learning. At such a school, equipped with tools and machines for acquiring all skills demanded in a particular trade, it was possible to concentrate on systematic learning.

The modernization perspective is what enforced more sophisticated ways of learning knowledge and skills for vocational purposes. It has now become necessary to learn skills and knowledge outside of the workplace. What are the reasons for this? It is not the possible to learn thoroughly while one is performing one's work. Especially in industry, workers are not allowed to waste (too much) time learning.

Important principles of learning like trial and error are too expensive or too risky. There is no time for repetition. Other reasons are that one does not see the effects of what one has done. Another quite important point is the fact that background knowledge that is not readily evident in one's actual performance nonetheless helps one to do one's job much better.

Historically speaking, the subject of drawing was very important in schools, also for vocational purposes. England's drawing schools were – so it was said – the crucial factor in the country's success at the World Exposition in 1848, when England was clearly the world's most advanced economy. Other subjects later also became very important for vocational performance: mathematics and natural sciences as well as commercial skills and other specific knowledge for vocational subjects.

More generally, the well-educated worker with broad horizons became an important figure in the discussion on vocational reform. The

modern worker possessed not just skills but also a more comprehensive education or 'Bildung', as it is termed in German. A nation with such a workforce has competitive advantages. New economy concepts in particular rely on this kind of skilled work, known in German-speaking world as 'Facharbeit'. In accordance with this concept, there were different modes of reaching this aim. The first idea was to vocationalize schools.

It was the German educational theorist Kerschensteiner who propagated 'activity schools' for young school students as early as 1908. These were schools that enabled students to take on an active role through learning by action and also acquainted them with technical skills and with a positive attitude towards work (Blossfeld 1993).

Georg Kerschensteiner and the German tradition placed great emphasis on the supplementary character of schooling, meaning that it should enforce and deepen the experience and the expert knowledge from the workplace (Kerschensteiner 1910). The American philosopher and educational reformer John Dewey also propagated activity schools. His concept was more general, however, in that it added vocational aims to public or general schools (Gonon 2009).

Today it seems quite clear that there is pressure to require more schooling. The knowledge economy is oriented towards knowledge, and science seems to demand even more school-educated people. The second idea is to transform workplaces to become more like schools.

This kind of development is the pedagogization of the workplace itself (Nijhof et al. 2002). A lot of things can really only be learned by applying them and using them directly. Computer and informatics skills are quite obvious examples of this. The difference between learning and work is becoming increasingly blurred in the computing sector. Highly skilled workers and highly motivated employees at enterprises need to have a learning culture at the workplace. The discovery of the workplace as a place of learning has helped to develop more pedagogical impact at enterprises.

The workplace has to gain more pedagogical relevance. This idea came not only from educational researchers but also from economists. That is why it was said that 'pedagogical and economic reason converge'.

The workplace and school are getting closer and closer to each other, or the workplace itself requires more and more 'Bildung', best provided by enterprises themselves. Some people understand this perspective only

as a normative idea: Plants should develop in this direction, and they should foster learning cultures. Others, however, speak of a development that is quite functional and necessary.

While this view is not widely shared, there are some educational researchers who argue that this is the way pedagogy can play a role in this debate. Another position is quite more sceptical on this account. The theory of differentiation argues that the logic of enterprise is to earn money and be competitive, while the logic of learning and teaching is not compatible with such aims. That is why the enterprise differentiates between different spheres.

A third concept is the so-called transformation theory. It is said that factories as schools are transforming themselves to meet the requirements of the new economy and globalization (Lakes/Carter (2004). Traditional ways of learning are losing their importance, and traditional forms of in-company training are disappearing.

These concepts make it clear that cooperation or collaborative work is the most appealing idea today. Every place of learning has its advantages. So the new perspective is to ask for more precise arguments for why a particular skill should be learned at this place and not at another.

3 Learning skills: When? General knowledge first and specific skills later on or the other way around?

The question of learning things at the right time has in this sense become less virulent, as it seems to be a widely shared belief today that it is necessary to first possess basic and general knowledge before going on to acquire specific knowledge.

Historically, however, this was different. Especially in the case of poor people, it was said that they should acquire useful skills directly. They should learn to work, and reading and writing was not a part of this learning. However, various requirements, such as recruiting useful soldiers for the army or enabling less-educated people to communicate with better-educated people, promoted the idea of providing general access to a basic level of education including the famous Rs: reading writing, arithmetic, and religion.

4 Learning skills: How? Teaching and learning at different places of learning

Learning in vocational education and training (VET) was traditionally informal learning. Students or apprentices learned casually by doing, through trial and error, and by observing and imitating the masters' expertise and attitudes.

This concept is different from the traditional school concept, which one might characterize as a model of formal learning. The most common concept of learning in school is the model of instruction. Teachers teach clearly defined subjects and students have to learn them, mostly by reading. The knowledge is mediated by a competent person, the so-called teacher.

This is an effective way of transmitting knowledge. I stress this fact because this kind of teaching is often heavily criticized in the literature. However, it is the method that is applied most often in school, and despite its low prestige, teachers spend most of their time as transmitters of knowledge. There are a lot of variations of this instructional model, and surely it is not just an opposition between active teachers and students as passive vessels. The place of such teaching and learning is the traditional school.

The second model is the apprenticeship. A master performs and an apprentice observes, asks, and imitates in order to learn all of the important skills and attitudes. This is the most appealing model for acquiring skills. This kind of teaching and learning is the one most applied at the workplace.

A third model does not have such a clear location, whether in schools or at enterprises. It is a loose learning arrangement. The teachers or organizers of possibilities for learning remain more in the background, and the students or apprentices themselves 'discover' useful facts and skills in relation to problems. This kind of problem solving is highly appreciated among educational theorists.

What is the defining feature of the dual system, often also referred to internationally as the 'apprenticeship system'? In the following I want to analyse not the 'systemic' aspects as such, as this has already been done convincingly by W. D. Greinert (1994) in his differentiation of the market from the state model, but rather specific forms of learning. I will thus

return to the duality of 'trade' and 'learning' proposed by H. Zschokke (1893), and more particularly to the specific mix of workplace-related learning and knowledge communicated in school, to look at the specific features of vocational education as provided by the apprenticeship system and its possibilities for the future.

As already stated, the appropriately named 'dual system' features not only two places of learning but also two different learning cultures. It clearly differentiates learning in a scholastic context from learning in the context of the workplace. In the following I will concentrate on the vocational learning at the workplace as the origin of vocational education.

Michael Coy and his fellow researchers used a mainly ethnological approach to conduct a worldwide analysis of learning processes in skilled industrial and traditional craft occupations that integrate teaching methods into the work process. They describe African artisans, Japanese potters, and American industrial workers and arrive at the following definition of the apprenticeship model: 'Apprenticeship is the means of imparting specialised knowledge to a new generation of practitioners' (Coy 1989, pp. IIIff.).

A specialized spectrum of knowledge and skills is in this way passed on to a new generation, enabling the 'novices' to become 'experts' over the years. The knowledge and skills meant here are not just 'physical skills', that is, manual skills, but also area-specific skills for shaping economic processes and establishing social relationships. The characteristic thing about this process is the fact that such a spectrum of knowledge and attitudes cannot easily be transmitted in the conventional manner: 'Apprenticeship is employed where there is implicit knowledge to be acquired through long-term observation and experience' (op. Cit.).

According to these findings, then, the apprenticeship has its place where implicit knowledge which cannot simply be communicated or written down is required. Such a learning process therefore involves the acquisition of special skills and knowledge which cannot simply be looked up in the library, accessed through the internet, or communicated in some other manner through the media (see also Schön 1983). Such skills and knowledge cannot be transmitted directly but require the active participation of the learner (Kerschenssteiner 1910). As in a family situation, such learning includes intensive participation in a social activity. Here, unlike in the classic teacher – pupil discourse, manual activity is

in the foreground, a situation treated as exemplary by many educational reformers, from the activity school movement at the turn of the 20th century to the advocates of project teaching today. Learning is not based, at least not primarily, on verbal communication but is transmitted through an object, in this case the product of work. This product orientation is central because it is among other things in the product itself that success in learning becomes visible.

The learning relationship involves a transfer of 'information' (in the broadest sense), which has a particular social and material arrangement as its precondition. Learning is not, as is generally the case at school, the primary aim in this process. Rather, learning often happens 'in passing', as part of daily work. Here knowledge and skills arise from the immediate activity and are often acquired by the novice through repetition. It is like learning to ride a bicycle or how to tie one's shoelaces: Understanding and comprehension are best guaranteed through emulation and actual performance of the task. The teacher or instructor still has the job of facilitating such a process by presenting the appropriate sequence of events and if necessary giving reasons for exercises and repetitions. The essential thing about the learning process is that the resources that render emulation possible are made available to the learner. The fact that knowledge is 'implicit' also means that the whole context has to be experienced and absorbed. It hence seems that an important element is the 'long-term observation' mentioned above. Progress in learning presupposes observation over a certain period of time. This ultimately leads to increasing skill, which in turn can be gauged by the product of work.

This learning through activity always was and still is characteristic of traditional craft skills, but it has also marked the industrial culture built up on the basis of these skills and is certainly not confined to initial vocational training. Implicit knowledge of this kind is not only difficult to communicate but also difficult for the public to access. The guilds and the skilled trades always took care to keep their specialized knowledge and their craft skills 'secret', that is, available only to a select circle. This was the basis for the economic success of their trade and also for many artisans' pride in the fact that the precondition for this spectrum of abilities was many years of experience that were not available to just anyone. Closely connected to this principle of 'imitatio' is another

principle, that of 'vocatio'. Such knowledge and skills were passed on in the trade as corporate values and were reserved for a selected group of people, who were, as the Latin has it, 'called' to the trade. This principle of imitatio, strongly rooted in preindustrial society, was in a broader sense aimed at the good behaviour of the apprentice, and these aims were later extended by Georg Kerschensteiner to include social and civic concerns. This aspect is still observable today. Indeed, Kw. Stratmann (1992) sees it as an obstacle to the modernization of vocational education.

Historically, we can see a clear growth in technical innovation based on the principle of division of labour, often leading to changes in craft and industrial work. These innovations were often triggered by new inventions, which in turn made use of scientific discoveries. Unlike craft skills and knowledge, which are strongly linked to experience, the penetration of technology based on science is subject to the logic of the respective sciences themselves. The history of industrialization and of industrial labour can be described as a continuous penetration of the world of labour by scientific knowledge.

For success in economic, social, and military undertakings, Th. Hobbes (1978) already saw the increasing importance of 'sapientia', a wisdom based on science and to be found in books, alongside 'prudentia', the intelligence based on experience so necessary for day-to-day practical and craft activities. The essential difference between these 'bookish' forms of knowledge stems from the fact that they cannot, or at least not in themselves, be inferred from situations. Mathematics and the various natural sciences have their own history. These forms of knowledge are in turn themselves based on previous knowledge and are in their abstract form the result of a historical process. One of the declared aims of science is precisely to attain for our knowledge a high degree of situation independence, that is, objectivity. In the formation of knowledge, implicit factors should be excluded as far as possible, though whether this can be done completely is another question, as M. Polanyi (1966) has noted.

Access to such generalizable knowledge in turn requires a specific initiation. This is not a professional knowledge arrived at on the basis of professional activity and experience but rather an applied knowledge transferred to work which changes the existing basis of the process. The principle of its effectiveness lies in this manifold applicability, that is, its numerous possibilities for being transferred to new situations, which also

means a potential for innovation. On the basis of the rationalization and formalization of processes, a product can, with the appropriate changes or reorganization, be manufactured more easily and with less difficulty by fewer people. The relationship of previous periods, where technology followed from artisan practice, has been stood on its head by modern, that is, science-based, technology (Radkau 1989). This change also finds expression in a change in the material basis, from the age of wood, in which artisan skill still meant ‘almost everything’, to the age of iron, which opened up new perspectives on the organization of the production process.

As such knowledge is of benefit to the process of production but cannot simply be transmitted through it, further education in general, and later on the vocational schools in particular, took on an increasingly significant role. These developments encouraged a shift in vocational education towards scholastic institutions, which also had to take on more and more “all-round” educational tasks. The history of vocational education can therefore also be described as the gradual disengagement of the qualification process from the immediate labour process. This is the case particularly for scientific and technologically based knowledge.

5 Conclusion: The scholarization of vocational education

It is obvious that a knowledge-based economy also requires new forms of learning. The knowledge-based society is not – as it seems to be – based upon scientific knowledge as an exclusive form. Knowledge management and the fact that learning at enterprises is often very closely linked to work, and that sometimes even the limits are blurred, shows us that competence and development of competence is quite an important thing today. Competence development is not so close to formal learning. It is not exclusively functional but also includes biographical aspects and long-term commitment.

On account of the so-called third technological revolution, machine-work is now networked and computerized, and it is possible to observe a further replacement of manual skills by machines. This gives the industrial labour of today a different character than that of 20 years ago. These developments should not, however, lead us to draw hasty conclu-

sions about present needs in terms of qualification: manual skills and accumulated knowledge will not simply disappear. In order, for example, to be able to work with information technology in industrial production, one still needs to possess mechanical knowledge and skills, so as to be able to understand what the computerized information is based on and intervene should disturbances occur. Nevertheless, new technology can no longer be acquired exclusively through learning by doing, that is, a learning immanent in the work process itself, and companies are dependent on instruction at school and in the workshop. Experience-led activities are losing significance in the concrete work process. As background knowledge and skills, though, they still remain important assets of skilled workers, differentiating them from academic technologists and unqualified novices.

In addition to the cultural and social changes which have promoted an increasing scholarization of society since the 19th century, there have thus also been developments on the business side, giving increasing importance to school and to training away from the workplace. The increasing weight of academic components and of general education within vocational education has therefore been noticeable in the case of most occupations (Kell et al. 2004). The recent reforms in Switzerland too, like the introduction of the 'maturité professionnelle' and the revision of the general educational syllabus of the vocational schools, reinforce the dominance of the learning culture already prevailing in the rest of the educational system.

Even today, many activities are predominantly based on experience and implicit knowledge. Alongside this, a science-based technology that is putting traditional skills under pressure has gained acceptance in the course of industrialization. Skilled industrial and craft work now starts from a patchwork of skill and knowledge elements. Looking to the future of the dual system, Wolfgang Lempert (1998) sees reform leading to a greater focus on the 'pedagogical core' of vocational education. For him, the most important principle is that of 'rotation', continuing periodical change between systematic and situational learning, with the public-sector schools devoted to the first and the enterprise particularly suited to the second. Experience must combine with wisdom, which means, to return to Zschokke (1893) once again, that 'trade' would do well to take a leaf from the book of 'learning'. Those who wish to enhance the

attractiveness of vocational education by increasing school-based and all-round education, as is exemplified by the recent reforms, should, on the other hand, also be concerned about ensuring that learning in the enterprise is also given enough attention. It is this balance between practical application and the theoretical background that gives the apprenticeship system its strength and viability for the future, despite all the prophecies of doom.

The vocational quest today, however, is to find a balance or an adequate mixture of different modes of learning and combine the advantages of several places of learning.

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PERSPECTIVES OF VET
TEACHER EDUCATION IN
DIFFERENT EU COUNTRIES

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VET Teacher Education in Germany

Structural Issues and Fields of Conflict in Business and Economics Education

1 Introduction

In Germany, VET teachers are expected to be *experts in their field of study* (e. g., *Engineering or Business Administration*) and *educational specialists*. Also, they are expected to be able to consider the content of their subjects and the specific problems and issues of workplaces for which their vocational students are to be prepared *as non-separable fields of professional competence* (Kell, 2011, p. 444; Grollmann/Bauer, 2008). The respective study programmes (Berufspädagogik and Wirtschaftspädagogik) are therefore characterized by a complexity which is not typical for courses representing a more or less narrow field of expertise, since VET teachers need profound subject knowledge in, for example, economics and business administration (*expert*) and basic pedagogical knowledge and skills (*pedagogue*). By applying this twofold concept, the qualification 'Business and Economics Education' (Wirtschaftspädagogik) paves the way for graduates to enter diverse fields of professional activity, such as vocational schools, private enterprises, or institutions engaged in the educational administration (Deissinger/Seifried, 2010, p. 223). Besides completing a master's (or formerly a diploma) degree, prospective teachers have to complete teaching practice (already starting at university) and industrial internships. These features underline the practice-oriented part of vocational teacher education future teachers need to complete in addition to academic subjects (KMK, 2004, p. 4).

The relation between theory and practice is the topic of diverse scientific models and discourses and has not yet been elucidated in full (Makrinus, 2013, pp. 58 ff.). In the context of Business and Economics Education it involves two problems: First, it touches on the question of professional theory and practice, which means that there is often

tension between scientific theories and company-based practice (*expert* in theory and practice). Second, it is supposed to link up pedagogical theory and teaching practice (*pedagogue* in theory and practice). Still, as Kell (2011, p. 444) points out, it remains an open issue what kind of subject knowledge and what kind of pedagogical knowledge are really functional and relevant for VET teacher training and for the development of broad professional competences in this field, how much weight each of these two areas of knowledge should be given, and also how universities and colleges of didactics and teacher education (representing the second, more practice-oriented phase of VET teacher training in Germany) should emphasize their respective roles in the skill formation of VET teachers in the German context. After all, there is a lack of empirical findings on the efficacy and constraints and also the effects of particular elements of VET teacher training as well as their interrelations (Blömeke, 2004; Deissinger/Seifried, 2010, p. 233; Seifried, 2008, pp. 10 ff.).

One of the features of German VET teacher training is that it evolved with the formation of what we now call the 'dual system' of vocational training, which is basically an apprenticeship system (Deissinger, 2010). The fields of conflict mentioned above are reflected in these historical processes, which have to be understood if we wish to comprehend the essential characteristics of both the VET system and the VET teacher education system in Germany. In the following we will depict these structures in a more general way but also by looking more precisely at the training of VET teachers for commercial schools on the basis of courses in Business and Economics Education. The University of Konstanz in the State of Baden-Württemberg introduced a typical course structure of this kind, although some changes have occurred in recent years, both in the organizational structure of the VET teacher training course and in its clientele. The German example shows that, despite the difference in the ways general and higher education on the one hand and vocational education on the other are perceived and regarded, there is not a lot of substantial difference in the ways general and vocational teachers (as academic teachers) are trained in Germany, aside from the fact that they both enjoy civil servant status and equal pay in the German school system. The latter point implies that, like in France, but unlike in the UK, Germany's VET teachers and their training are associated

with ‘a relatively high degree of professionalization in accordance with their colleagues in general education’ (Grollmann, 2008, p.540). The question we wish to try to work out and respond to in part in this article is why the Ukrainian teacher education system does not have similar structures and whether there are prospects for this country to improve its VET teacher education by drawing from European experiences. In the context of our Erasmus+ project, which defines the range of topics covered in this edited volume, the German system may be seen as a blueprint for other, less ‘developed’ countries, though not exclusively, with respect to new developments and/or prospects for reform.

2 The history of vocational teacher education in Germany

When we talk about VET teacher education in a historical view, we have to focus on the development of the VET system as such, which, in the case of Germany, consists of the dual system (Deissinger, 2010) and the system of full-time vocational schools (Deissinger, 2019). In the case of the dual system, we can look back to a structural development which started in the late 19th century. The history of vocational training in Germany may be subdivided into five phases. The *first period* was the apprenticeship system of the guilds, which, as in England, emerged in the Middle Ages (Stratmann, 1967, pp.37 ff.) and, though in decline, continued to exist far into the 19th century. The *second phase* marks the era of liberalization, which reached its legislative peak in 1869. The *third period* began in 1897 with the revival of the system of apprenticeship, sanctioned and promoted by the Wilhelmine state (Winkler, 1976). The *fourth period* was determined by the emergence of formalized vocational training in industry, above all in the 1920s and 1930s, chiefly following the lines of the handicraft apprenticeship system. The beginning of the *fifth period* was marked by the passing of the Vocational Training Act in 1969, which finalized the course of development beginning in 1897 by reaffirming the trade associations as major agents of company-based training. The emergence of this highly structured training system was accompanied by the didactic and institutional development of the part-time vocational school since the beginning of the 20th century and the

subsequent enactment of compulsory part-time education, which is seen as characteristic for the German VET system (Deissinger, 1994; Ryan, 2001, p. 136).

It is interesting that the first formalized VET teacher training courses at universities were created as early as just after 1900 in the commercial sector, although the roots of the dual system clearly lie in the craft sector with its technical occupations. Business and economics education courses derived from business administration courses in the so-called *Handelshochschulen* (university-like academies for the teaching of business and economics). The cities which established these institutions still are among the strongest providers of business and economics education (Wirtschaftspädagogik) in Germany, namely Mannheim, Frankfurt, Nuremberg, Leipzig, and Berlin (Pleiß, 1999; Zabeck, 2013, pp. 514ff.). The first exams for business teachers (Handelslehrer) were held in Leipzig (1900) and Frankfurt and Cologne (1901). For some time, the number of business teaching students was even higher than the number of those studying the classical economic disciplines (Zabeck, 2013, p. 520). This type of VET teacher training expanded in the 1920s (Sommer, 1992).

One of the supporting developments in this connection was ‘Classical Vocational Education Theory’. Georg Kerschensteiner (1854–1932), widely held to be the ‘father of the German vocational school’, was its prominent protagonist, a fact which is underlined by Simons, who regards Kerschensteiner’s progressing ‘to the state of action’ and seeing ‘that his plans were put into force’ (Simons, 1966, pp. 124f.) as the central momentum in the evolution of the German compulsory vocational school system (Winch, 2006). His idea of bridging the gap between the end of the elementary school (Volksschule) and the beginning of military service by establishing vocational schools for school-leavers was based on the conviction that ‘education for the ordinary man and woman must be woven into the practical work of life’ (Higginson, 1990, p. 248). The continuation school’s purpose was to complement workshop training, and Kerschensteiner linked it to the idea of *Beruf*, which in his eyes stood for the major route to *Menschenbildung* (education of the individual) – an ideal going back to Humboldt and associated with the concept of academic education that emerged in the course of the 19th century (Blankertz, 1982, pp. 89ff.; Deissinger, 2011). Kerschen-

steiner conceived of individuals as essentially social beings, with respect to both their occupational competence and their citizenship within the community. This implied a break with traditional educational thinking (Simons, 1966, pp. 28f.), though he did not at all give up the notion of *Bildung*.

In the wake of this development, but also under the influence of commercial associations that wanted to raise the status of the *Kaufmann* (commercial specialist), business education developed as an academic discipline (Zabeck, 2013, pp. 514ff.). Although for some time teachers of lower secondary education and practitioners were also needed to comply with the growing demand of the economy for skilled commercial employees, the business teacher model of the *Handelshochschulen* became a firmly established academic feature in most German states in the first half of the 20th century. *Wirtschaftspädagogik* started formally as an academic discipline with the establishment of the first professorship in Leipzig in 1923. Vocational education theory gave the young discipline its 'identity'. This enabled educational science, the core subject for holders of diploma degrees, to emerge as one of the crucial features of modern VET teacher training at universities in the commercial sector.

Besides this 'integration discipline', which established the typical profile of the VET teacher in Germany, the notion of adding general education to the curriculum of future teachers (Zabeck, 2013, p. 521) is also still visible today, since students choose between profiles based exclusively on economics and business and a study track including one of the typical subjects taught at vocational schools (e. g., German or politics). Zabeck points out that the training of VET teachers in Germany, even in the early years of its institutionalization, was clearly determined much more by pedagogical and didactic courses than by what future general education school teachers had to study. This fact includes the notion that vocational didactics were supposed to remain in the sphere of pedagogy rather than be subject to the respective teaching discipline (Zabeck, 2013, pp. 523f.). Modern VET teacher training courses, such as the one in Konstanz (established in 1998) still follow this concept (Deissinger/Seifried, 2010) although business and economics education courses are not necessarily homogeneous in their curricular structure due to the fact that the German states are responsible for university education. Also, besides state universities, there are now also 'coopera-

tion models' between different higher education institutions or private universities and pedagogical academies (e. g., in the State of Baden-Württemberg).

In contrast to business and economics education, technical education (Berufspädagogik/Technikpädagogik) developed as an academic discipline only after the Second World War, although these courses also became linked up with the respective teaching disciplines, such as mechanical engineering (e. g., in the case of Stuttgart or Darmstadt, as typical technical universities). One of the reasons was the fact that in the 1930s and 1940s, through the influence of National Socialist thinking, teacher training institutions experienced a kind of 'downgrading', as they were expected to deliver a more 'seminar-based, strongly practice-oriented education' (Nickolaus/Abele, 2008, p. 4; Zabeck, 2013, pp. 530 ff.; Bader, 1995). Even today, more of the professors in technical education have a traditional occupational background, such as engineer, before entering the field of vocational pedagogy.

In the 1960s and 1970s, VET teacher training became more or less firmly based in the university sector, which saw its role in providing subject-specific academic knowledge for the future teachers. This is also the time when the so-called second phase became an integral part of VET teacher education. Up to the present day, in the case of Germany, this means that VET teachers first complete academic studies in business or technical education and afterwards a period of school-based and seminar-supported practical training focusing strongly on didactics and teaching competence (normally for 18–24 months, depending on the state). This 'preparatory service' (Referendariat or Vorbereitungsdienst) no longer takes place under the auspices of universities or colleges of education since the states' ministries of education carry out a much more direct governance, which is justified by the fact that the beginning teachers are already employed as civil servants (Nickolaus/Abele, 2008, p. 4). However, as Grollmann points out (2008, pp. 535 f.; see also Nickolaus/Abele, 2008, p. 4), the variety of teacher training models in the VET sector is certainly much higher than in general education, which is compounded by the fact that Germany's 16 states bear responsibility for their respective education and teacher training systems (Munderloh, 2018). This feature, which means that VET teacher training can be more or less practice-based, also can be explained historically, since the history

of teacher training for academically oriented secondary schools has to be traced back to the rise of the modern German university in the 19th century on the basis of Humboldts's notion of *Menschenbildung* (education of the individual) and the emphasis educational policy placed on 'humanistic' subjects, while the history of VET teacher education follows the tracks of the development of the social and natural sciences or engineering, which became subjects at universities later (Zabeck, 2013, pp. 530 ff.; Rebmann/Tenfelde/Uhe, 2003, pp. 192 ff.). The obvious heterogeneity of the VET teacher education system becomes even more understandable when we look at the objectives of VET teacher training courses at universities today: Graduates with a formal teacher training qualification (normally a master's degree) are eligible to work both in the school system and at companies or other institutions, although the majority of the students have a more school-oriented motivation. Recent developments also stretch to the health and care occupations where teacher training now increasingly is located at universities of applied sciences, with graduates mostly entering these courses with an occupational background (Sieger, 2018). Hence, VET teacher training is not at all a homogeneous system, and it is also the complexity of the profession in general which stands out as a constrasting feature to teachers in the general education system (Bauer/Grollmann, 2006).

3 Vocational schools in Germany as fields of activity of commercial teachers

The great significance of VET for German society becomes obvious when one considers that 47.2% of the adult population in Germany possessed VET qualifications in the year 2016 (Destatis, 2018). Even though higher education has gained in importance on account of the increasing academization in the past decades, the relevance of apprenticeships is still strong in comparison to other countries. In 2016, some 480,000 apprentices were newly registered in the VET system, while some 511,000 new students enrolled at higher education institutions (BMBF, 2017, p. 45).

There are basically four different types of vocational schools in Germany:

- part-time vocational schools as learning venues in the dual system (1)
- vocational schools as providers of higher school qualifications (2)
- full-time vocational schools as learning venues of school-based training (3)
- vocational schools or courses as part of the transition system (4)

Figure 1 shows the positions of these schools within the German education system.

The dual system (1) ‘[...] is deemed to be highly effective in expediting the transition of youths from schools to work, and thus has caught global attention in the more recent years’ (Chu, 2015, p. 1). It provides apprenticeships in nearly all economic sectors, helping to keep the number of unskilled employees at a relatively low level in comparison

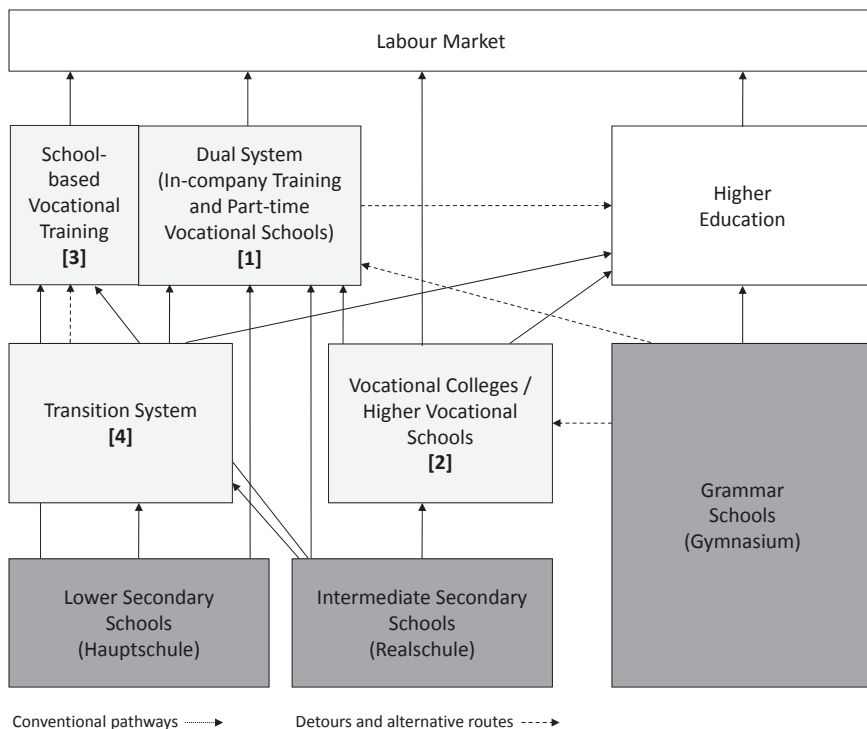


Figure 1: The German education system (revised figure based on Deissinger/Smith/Pickersgill, 2006, p. 39)

to other countries. The learning arrangements are intermittent school-based and company-based learning phases consisting of block courses or on a part-time basis during the week (Deissinger, 2010, pp. 448ff.). One of the reasons for its efficiency is the underlying '[...] idea to bridge the historically and mentally separated worlds of education and training by establishing a specific alternating learning environment for school leavers and at the same time to define it as an apprenticeship system building up on a specific cultural heritage [...]' (ibid., p. 449). Not only the state is held responsible for providing VET; companies are also engaged in this sphere (Deissinger/Hellwig, 2005, p. 313). The active involvement of companies in VET stems from German history and the specific understanding of apprenticeships and companies' role as professional providers, demanders, and beneficiaries of VET (Deissinger, 1994). Thus, the professional degrees attained in the dual system are widely accepted in the job market. It 'functions as the major non-academic route for German school leavers by giving them formal access to the labour market as skilled workers, craftsmen, or clerks' (Deissinger, 2010, p. 449).

The dualism of the dual system, characterized by the two learning venues, corresponds to a two-part jurisdiction (Greinert, 1995, p. 26). It is shared by the federal government, which is responsible for the laws on vocational training (Vocational Training Act of 1969 and revision of 2005), and the states, which pass education laws (Deissinger, 2010, pp. 449ff.). In consequence, vocational schools belonging to the dual system (as well as full-time VET schools) operate under the auspices of the states, and teachers enjoy the benefits of being civil servants.

At 58 %, most of the apprentices registered in the dual system are located in the industry and trade training sector and are therefore educated partly by commercial teachers (Destatis, 2018).

Since companies and school-leavers have concerns in terms of quality and functional relevance for the world of work in the case of full-time vocational schools compared to courses in the dual system, the latter play a dominant role as the non-academic 'royal road' into the labour market (Deissinger, 2010, p. 452; Deissinger, 2007, pp. 364ff.; Deissinger/Ruf, 2007; Deissinger/Ruf, 2006; Dobischat/Milolaza/Stender, 2009). In 2016/17, 1.4 million apprentices were enrolled in the dual system. The secondary full-time vocational schools outside apprenticeships (see

Table 1: Categories and functions of full-time VET schools in Germany and percentage of teachers active per type

Types of courses	Functions* and percentage of teachers**
I. Courses leading to an educational qualification (e. g., the intermediate school qualification or 'Abitur'; see Fig. 1: 2)	Qualifying for higher school levels 44 %
II. Vocational preparation and foundation courses and basic vocational introduction classes (VAB) for refugees, primarily without educational or occupational qualification, including the lower secondary school-leaving qualification (see Fig. 1: 4)	Promoting vocational training maturity, improving young peoples' chances on the training market 6 %
III. Courses leading to an occupational qualification according to state law (e. g., in child care or physiotherapy; see Fig. 1: 3)	Vocational training outside the dual system providing a transferrable labour market-relevant occupational qualification (state law) 11 %
IV. Courses leading to an occupational qualification according to the Vocational Training Act or the Craft Regulation Act (i. e., outside the dual system; see Fig. 1: 3)	
V. Courses leading to a nationally recognized qualification in the health sector (hospital nurses, nurses for the elderly; see Fig. 1: 3).	

39% of VET teachers are active at part-time vocation schools

* Functions based on Deissinger, 2010, p. 451, and Deissinger, 2019

** Percentages of teachers based on Frommberger/Lange, 2018, p. 12, and Destatis, 2017, p. 686, excluding V.

Fig. 1: 2, 3, 4) had 1.1 million students in the same year (Destatis, 2017, p. 11). This category of schools is also the field where university-trained vocational teachers work, which obviously makes them relevant for our considerations in this chapter too.

Full-time VET is not purely school-based, however, because it can include work placements. It is not homogeneous, since the states differ in terms of the length and names of the courses they offer. Unlike the dual system, the full-time VET school system does not merely qualify students

for the labour market but also fulfils additional functions like ‘parking’ young people without an apprenticeship contract in the dual system and/or offering them additional educational qualifications (Deissinger, 2010, pp. 451 ff.; Deissinger/Smith/Pickersgill, 2006, pp. 38 ff.; Zabeck, 1985, p. 81). In consequence, there are several subsystems of full-time VET deriving from their differing functions and legal footing, as illustrated in Table 1.

Commercial teachers are VET teachers of economics and business administration. They typically are graduates of university degree programmes in ‘Business and Economics Education’ (formerly known as ‘Diplom-Handelslehrer’ before the Bologna reform). Those having completed the subsequent teaching practice traineeship use to work at part-time vocational schools (commercial type; dual system), higher vocational schools leading to ‘Abitur’ (I.), full-time vocational schools (lower and middle levels; III.), vocational preparation and foundation courses and basic vocational introduction classes for refugees (II.), and at specialized further training schools in the commercial sector.

4 Required competencies of commercial teachers in Germany

In view of the diversity of schools and students, commercial teachers need to have a wide range of competencies (Frommberger/Lange, 2018, p. 13; KMK, 2008/17, p. 5). The national standards are set down in the Framework Agreement for VET Teachers, which requires that scientific findings as well as professional practice be taken into account and that teachers therefore possess subject competence as well as pedagogical professional activity competence (KMK, 1995/2016, p. 2). Grollmann points to this aspect when he underlines the facets of teachers in the VET field (2008, p. 538):

Even in Germany, which maintains the highest formal level in terms of academic requirements for entering the vocational teaching field, there is usually an amount of real work experience prescribed through the university curricula. The majority of student teachers in Germany hold an occupational qualification in their field, and if they lack this qualification, they have to undergo an internship in an enterprise.

This quotation makes it clear that the links between the VET teacher training system and the VET system are close – interestingly with regard not only to those who graduate as academic teachers but also to those who start their studies in business or technical education.

Reinhardt (2009, p. 23) stresses the significance of theory and practice as well and names reflection as the linking element:

Teacher education has to succeed in switching between theoretical and practical approaches in every phase, no matter whether the emphases differ. Thinking without doing remains just words, while doing without thinking theoretically will remain blind in cases of crisis and change. Reflection links the one to the other and vice versa.

Especially for VET teachers, who have to deal with the dynamics of the rapidly changing world of work and heterogeneous classes, reflective competence is understood as a key component and is supposed to be provided through practical experience before and during university studies (KMK, 2008/17, p. 5).

On the basis of a systematic research overview, Baumert and Kunter (2006, p. 482) model the professional activity competence of a teacher as a fourfold construct containing beliefs and values, motivational orientations, self-regulation abilities, and professional knowledge. It has been demonstrated that the relevant beliefs and values already exist before the start of a teacher education programme and are rather resistant to change (Blömeke, 2004, p. 59). Motivational orientations are linked with reasons for career choice and are hence to a large extent a matter of pre-study processes (Koenig/Rothland, 2013, p. 60). Likewise self-regulation abilities, motivational orientations are psychological characteristics (Baumert/Kunter, 2006, pp. 501 ff.). They depend primarily on personality and biography and can hardly be influenced by university teacher education.

Professional knowledge is accepted as a central component of the professional activity competence of teachers (*ibid.*, p. 481). It includes different areas of knowledge and skills, which in turn each comprise various facets of knowledge. Reflecting the current state of scientific discourse, the three core knowledge and skills areas are pedagogical knowledge, subject knowledge, and subject-specific pedagogical content knowledge. They take the form of theoretical formal knowledge and practical ex-

perience-based knowledge/knowledge in action. Formal knowledge includes subject knowledge, parts of subject-specific pedagogical content knowledge, and general pedagogic knowledge, while practical knowledge encompasses domains of teacher actions, particularly communicative actions (ibid., pp. 482 ff.; Reinhardt, 2009, p. 24).

Formal knowledge of a VET teacher means specific knowledge about the subject matters being taught (*expert*). In addition to formal knowledge, however, VET teachers are also required to possess expertise on the professional practice their students will be facing in the future. Skills in the professional fields of the corresponding occupations and a deep understanding of vocational learning processes are essential features of VET teachers' professional knowledge as *experts*, especially of those working at full-time school-based vocational schools, where students do not have as much company-based practice as apprentices in the dual system. Commercial teachers need to acquire scientific knowledge about economics and business administration or expertise and theoretical and practical skills in commercial vocations, especially at the operative management and commercial-administrative level (Sachbearbeiter). For activity as *pedagogues*, teachers absolutely need to possess theoretical pedagogical knowledge and work-based competencies, including competencies in pedagogical content knowledge of business and economics (Aff/Neuweg, 2011, pp. 1 ff.; Becker/Spoetl, 2013, pp. 15 ff.; KMK, 2008/17, p. 73).

In general, vocational teacher education in Germany is unified only to a certain extent and differs from university to university due to the implementation of different study profiles in the past (Kaiser, 2015, p. 141; Tramm, 2013, pp. 1 ff.). The Conference of Ministers of Education (KMK) took the understanding of the professional activity competence of a VET teacher as the basis for defining national standards for VET teacher training that guarantee a certain minimum of congruity.

These standards mainly involve a two-phase structure consisting (I) of studies at university (two-cycle studies with a subject-based bachelor's and a predominantly teaching-related master's or one-cycle teacher training), including school-based internships, and (II) a preparatory traineeship after graduation from university. Basic competencies in the student's main teaching discipline, methods of research and work, and pedagogical content knowledge requirements are typical of the study

phase at the university. The preparatory traineeship focuses on competencies defined by teaching practice. The standards also mention a third phase for fostering lifelong learning, further training, and continuing education. The objective here is a more extensive development of the professional role of a teacher (KMK, 2008/17, p. 3).

The follow-up traineeship is compulsory in all states and runs for 12 to 24 months (KMK, 1995/2016, p. 3). In Baden-Württemberg, the German state in which Konstanz is located, the teaching practice traineeship currently lasts 18 months (MKJSBW, 2015, § 10 I). The training institutions include state colleges of didactics and teacher education and public or private vocational schools approved by the state council (*ibid.*, § 5). The Framework Agreement for VET Teachers outlines the necessity of closely interrelating the first phases regarding educational knowledge and teaching competencies and orienting them towards the vocational school system (KMK, 1995/2016, p. 2; *theory and practice*). It requires students to earn 180 credits in their core teaching subject, and optionally in a second subject, 90 credits in educational sciences, including subject-specific pedagogical content knowledge and school-based internships, and 30 credits for the bachelor's and master's theses (Becker/Spoettl, 2013, pp. 15 ff.; KMK, 1995/2016, pp. 2 ff.).

The standardized study content for commercial teachers in the first or core subject is divided into four main parts: (1) business administration (single economic processes), (2) economics (macroeconomic processes), (3) didactics of economics and business administration, and (4) relevant reference disciplines and working methods (KMK, 2008/17, pp. 74 ff.). There are only rather general descriptions of these categories, therefore allowing lecturers a certain extent of academic freedom at the university.

Due to the polyvalent structure of the required professional activity competence of commercial teachers, the competence profile is normally very broad. Hence, VET teacher education is supposed to offer graduates a vast range of options in the labour market, beyond their role as teachers at vocational schools. 'Polyvalence' means that they are also qualified for the areas of human resource development, education and training outside school, the development of learning materials, positions at chambers of commerce, trade associations, trade unions, or other public institutions or even in higher education (Tramm, 2003, p. 6).

The KMK national standards take into account *theory and practice* by including theoretical and practical elements. They regard teachers as both *experts and pedagogues* and stress the polyvalent character of the Business and Economics Education qualification. In the next chapter we will introduce the commercial teacher training programme offered at the University of Konstanz as an example of a concrete implementation of the national standards complemented by the state standards of Baden-Württemberg.

5 Business and Economics Education at the University of Konstanz

The Business and Economics Education degree programme at the University of Konstanz is characterized by a specific combination of *scientific and applied* courses that are intertwined thematically and chronologically, leading to a profound education of the graduates as *experts* in the fields of economics and business administration and to the theoretical and basic practical competencies of a *pedagogue* (see Fig. 2).

The courses aiming at expertise in the teaching subject(s) are scientific elements and cover economics, business administration, and scientific work and research methods. Scientific courses focusing on the training of pedagogues include the theoretical content of pedagogy and didactics in general and content referring to business and economics education. In order to create learning settings that foster the combination of theory and practice for the expert as well as the pedagogue, practice-oriented theoretical courses and internships at vocational schools and companies are mandatory components in the study programme.

Bachelor's and master's programme

Structurally, commercial teacher training in Konstanz is assigned to the Faculty of Economic and Business Sciences. It is designed as a two-cycle programme consisting of a Bachelor of Science in Business and Economics (180 credits, 6 semesters) focusing mainly on the theoretical *expert* part of the studies and a Master of Science in Business and

Economics Education (120 credits, 4 semester) focusing mainly on the *pedagogical* part. Besides subject knowledge in economics and business administration, the bachelor's programme provides very basic pedagogical and didactic lectures for the students who select the Business and Economics Education specialization, offered as one of six different specializations. In the Business and Economics Education specialization, the students have the option to choose a subsidiary subject or to focus completely on a more intense study of economic and business topics (see Fig. 3; University of Konstanz, 2006/16; 2009/16).

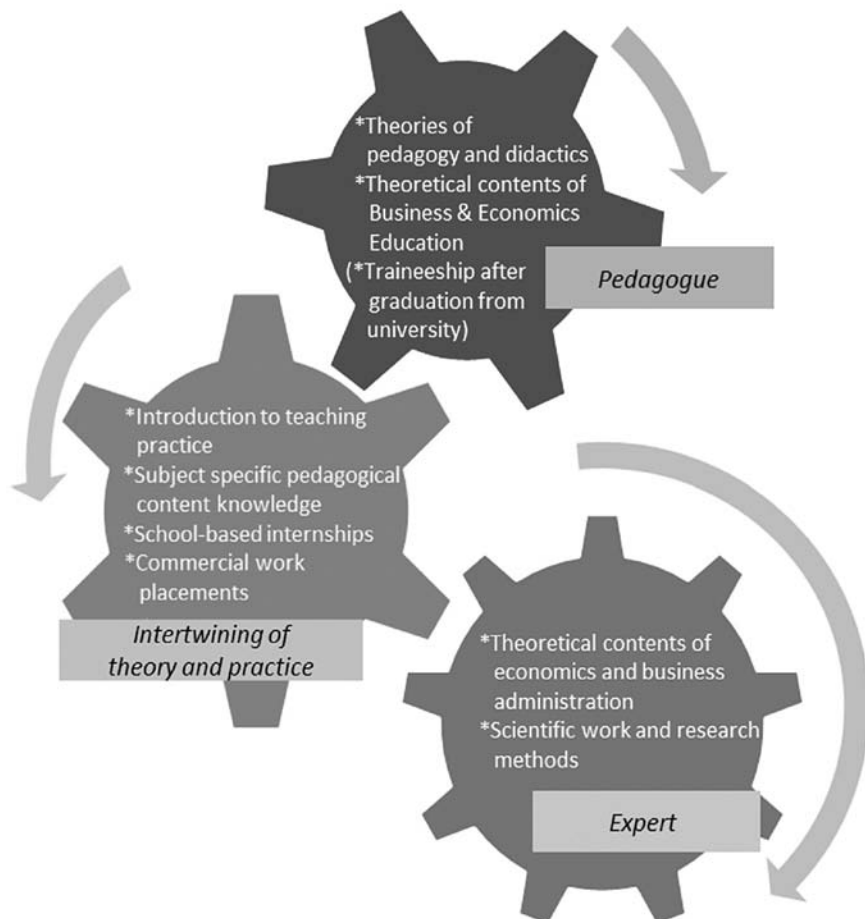


Figure 2: Managing the two fields of conflict 1. training *experts and pedagogues* and 2. *theory and practice* in the Business and Economics Education degree programme at the University of Konstanz

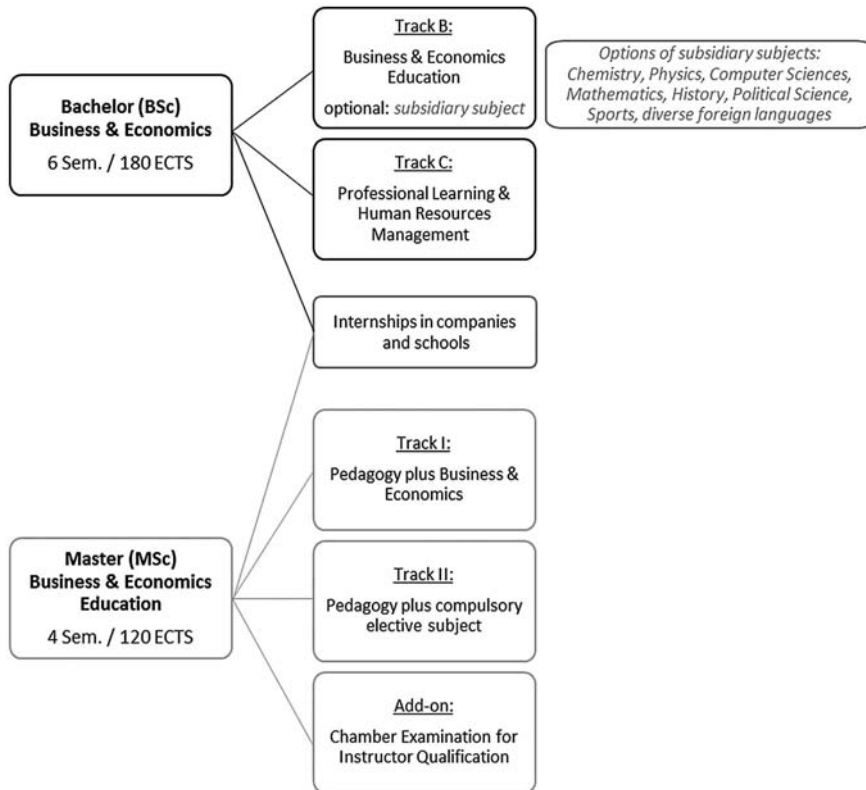


Figure 3: Business and Economics Education degree programme at the University of Konstanz

Compulsory courses of the bachelor's programme providing broad knowledge of economics and business administration are (University of Konstanz, 2009/16; 2018a):

- Mathematics, Statistics, Econometrics (18, 12, 8 credits)
- Fundamentals of Economic Theory (27 credits)
- Economic Policy (12 credits)
- Fundamentals of Business Administration (26 credits)
- Private Law (3 credits)
- International Investment and Finance (5 credits)
- Personnel Economics (5 credits)
- Option: Personnel Management and Pedagogical Seminar (5 plus 3 credits) instead of Econometrics (8 credits).

Several courses of the bachelor's specialization Business and Economics Education (track B) are targeted at providing basic knowledge in the sphere of pedagogy and didactics to prepare students for the subsequent master (University of Konstanz, 2018b):

- Introduction to Vocational Education (5 credits)
- Didactics I (3 credits)
- Introduction to Teaching Practice (3 credits)
- Pedagogical Content Knowledge of Business and Economics I (3 credits).

To attain the Bachelor of Science degree (180 credits), students have to complete a key qualifications course of their choice, a preparatory seminar for the bachelor's thesis, and their bachelor's thesis in addition to passing the aforementioned courses (University of Konstanz, 2018a).

The master's programme includes 29 credits in Business and Economics Education, such as seminars in Business and Economics Education (13 credits), a seminar in Company-based Education and Training (3 credits), Didactics II (3 credits), Educational Psychology (3 credits), Pedagogical Content Knowledge of Business and Economics II (4 credits), and a lecture course in Business and Economics Education for advanced learners, currently VET politics (3 credits). As regards lectures in Economics and Business Administration, the students must earn 5 credits in Accounting and Controlling and an additional 5 credits in elective courses. Students *without* a subsidiary subject (track 1) have to select supplementary courses in Economics and Business Administration (47 credits), while students *with* a subsidiary subject (track 2) have to earn 47 credits in their particular subject. The students receive 4 credits for a course on research techniques and 20 credits for the master's thesis. These 24 credits open up prospects for graduates interested in a career as a researcher and provide competencies in strategies for gaining knowledge and exploring new topics needed in all fields in which they are qualified to work (University of Konstanz, 2009/16, pp. 3 ff.; 2018c).

Internships

Both the bachelor's and the master's programme include several internships. Commercial work placements of at least 6 weeks (8 credits) are

a part of the bachelor's programme (University of Konstanz, 2009/16; 2018b/c). They are meant to offer settings for applying knowledge learnt at university, for obtaining new practical knowledge in relevant subjects of the bachelor's programme, for gaining professional experience, and for deepening and broadening competencies and qualifications for studies and future occupational options (University of Konstanz, 2018d, p. 33). Thus, they primarily serve to link *theory and practice* but also include aspects of *expert knowledge*.

The students enrolled in track B (see Fig. 3) of the bachelor's programme (Business and Economics Education) also have to complete an internship of 4 weeks duration (8 credits) at a vocational school (University of Konstanz, 2018b). With respect to the phases of teaching practice at vocational schools integrated into the degree programme the Ministry of Education, Arts, Youth and Sports of Baden-Württemberg (MKJSBW, 2001, p. 1) aims at linking teacher education at the university with the subsequent teaching practice traineeship conducted by the state college of didactics and teacher education.

The Master of Business and Economics Education programme therefore includes two additional internships (modules) of three weeks duration each at vocational schools (5 credits). Work shadowing and active teaching fosters the students' practical competencies as *pedagogues*. While the first internship focuses on 'standing in front of a class', the second one includes a higher obligatory number of lessons of active teaching and emphasizes teacher-centred teaching and instructional designs of lessons. The third internship, involving the highest number of compulsory lessons of active teaching, stresses student-centred teaching as the more demanding way of teaching for beginners. The trainees also gain experience outside the regular lessons by taking part in events like school conferences, parents' evenings, school celebrations, etc. In contrast to the first school-based internship (bachelor's programme), the second and third internships are organized by the state colleges for didactics and teacher education. The schools offering the internships cooperate closely with the state colleges on pedagogy, educational psychology, and subject-specific pedagogical content knowledge. The trainees are assigned to tutors from the colleges who carry out training and mentoring. In order to foster their reflective competencies, the trainees usually receive feedback on the lessons they prepare and hold and receive an appraisal of their

aptitude as a teacher and advice for their next learning steps in a final advising session with the tutor (Deissinger, 2017; MKJSBW, 2013, p. 4; University of Konstanz, 2009/16, p. 4; 2016, p. 1; 2018e, pp. 16ff.).

Before being accepted into the 18-month state-regulated teaching practice traineeship, in which the colleges are closely involved, graduates of the master's programme have to complete a commercial work placement of at least 42 weeks (MKJSBW, 2014, p. 1; University of Konstanz, 2009/16, p. 4). It provides fundamental applied professional expertise that cannot be taught at university but is substantial for the broad education of *experts* in the field of applied business and economics, linking *economic theory and practice* taught at university.

Theory of teaching practice and methodology

As a means of combining *pedagogical theory and practice*, the degree programme includes several applied courses on teaching and teaching preparation, including methods of teaching and learning.

Before starting the first internship at a vocational school, the students have to pass the preparatory seminar 'Introduction to Teaching Practice at Vocational Schools', where they receive theoretical input about teaching practice, learning methods, and concepts for planning, structuring, and preparing lessons and assessing them. They hold their first lesson at a vocational school and receive detailed feedback from the lecturer and their fellow students on the lesson and its preparation (University of Konstanz, 2018e, p. 41).

The bachelor's and master's programmes contain the obligatory courses 'Subject-Specific Pedagogical Content Knowledge in Business and Economics I/II', which are usually taught by VET teachers who are familiar with teaching practice at vocational schools. Course 1 is a prerequisite for the second internship at a vocational school and connects didactic theory and teaching practice by providing deeper theoretical didactic knowledge and reflection on the practical feasibility of the theoretical aspects examined. Course 2, required for the third school-based internship, teaches deeper knowledge concerning teaching methods and links it with teaching practice by having the students prepare lessons close to the curriculum of vocational schools under consideration of certain theoretical aspects. The lesson drafts are discussed in depth with

the entire group of students taking part in the course (University of Konstanz, 2018d, p. 42; 2018e, p. 12).

Positions and satisfaction of former graduates of the Konstanz course

A survey with $n = 184$ respondents, conducted as part of a master's thesis, investigated the areas of employment of graduates of the Master of Business and Economics Education at the University of Konstanz in the years 2004 to 2017 and their satisfaction with their professional position. 83 % were working in the public service, most of them as teachers, 15 % in the private sector, and 4 % in other areas (see Table 2). Only one of the respondents was seeking work at the time of the survey.

Table 2: Professional activities of graduates of the Master of Business and Economics Education at the University of Konstanz in the years 2004 to 2017 (figure based on Stolle, 2014)

Type of activity/employment	Frequency
Teacher or teacher trainee in public sector	134
Employed in private sector	23
Other activities in public sector	19
Parental leave	12
(Continuing) Education, further training	4
Activity on a self-employed basis	3
Freelancer activity on a royalties basis	1
Seeking work	1
Other family work	0

Graduation in 2004–2015, $n = 184$

In terms of satisfaction with their professional position, 90 % of the respondents were (very) satisfied (Stolle, 2014). It may thus be claimed that the graduates of the Master of Business and Economics in Konstanz can obviously make use of and derive benefit from a highly functional and versatile academic degree that also evidently prepares them well for their role as future teachers.

6 Current research on the efficacy of business and economics education courses

There is only little empirical research on the efficacy of (vocational) teacher education in Germany (Blömeke, 2004, p. 61; Bouley *et al.*, 2015, p. 100). The results of the existing studies were obtained predominantly from self-assessments, interviews, or document analyses (Blömeke, 2004, p. 61; Kleickmann, 2011, p. 307). Instruments for measuring the competencies of teachers are currently being developed (Blömeke *et al.*, 2013, pp. 1 ff.; Kuhn *et al.*, 2014, p. 149; Zlatkin-Troitschanskaia *et al.*, 2015, p. 117). The existing studies on the professional competence of teachers are often connected with professional knowledge, which is made up of subject knowledge, pedagogical content knowledge, and pedagogical knowledge (see chapter 4). They investigate the impact of these forms of knowledge on teaching quality, their development, and their function in making teacher education more efficient. Generally speaking, these studies make it evident that the professional knowledge of teachers has a positive influence on student performance (Baumert, 2010; Fritsch *et al.*, 2015, p. 31).

Regarding subject knowledge in particular, there are mainly studies from the US. They arrive at contradictory results, concluding that teachers need to have a certain degree of subject knowledge to achieve high-quality student performances but that beyond a particular threshold no additional positive effect can be found (Blömeke, 2004, p. 66). Studies focusing on (mathematics) knowledge of teachers and teaching quality have shown that teachers' pedagogical content knowledge impacts their teaching quality and the learning success of their students even more than subject knowledge (Bouley *et al.*, 2015, p. 2; Krauss *et al.*, 2008; Kunter *et al.*, 2011). Kuhn and colleagues (2014) analyzed the relationship between subject knowledge in economics and business administration and pedagogical content knowledge in these subjects. They found a weak correlation between business administration knowledge and pedagogical content knowledge and an intermediate one between theoretical knowledge in economics and pedagogical content knowledge. Bouley and colleagues (2015; Kaiser, 2015, p. 141) substantiated these results by confirming the assumption that subject knowledge and pedagogical content knowledge are positively correlated. Findeisen (2017,

p. 278) verified this finding in a study on the relationship between explaining knowledge of accounting topics as a part of pedagogical content knowledge and subject knowledge in accounting of future commercial teachers. The study found a significant correlation of $r = .58$, and beyond that subject knowledge was the most important predictor for a good command of explaining knowledge. However, these studies cannot fully answer the question whether universities are really able to educate their (vocational) teaching students well in terms of subject knowledge and pedagogical content knowledge.

Results of research concerning the general pedagogical knowledge teachers learnt during their studies at university are presented in an overview article by Voss and colleagues (2015). While researchers agree on the importance of possessing this kind of knowledge in addition to subject knowledge and pedagogical content knowledge, there are only few empirical findings (*ibid.*, pp. 190 ff.). Another study found that at least educational psychology, which is a part of pedagogical knowledge, is a decisive factor in teaching quality (Voss *et al.*, 2014). Courses teaching principles of teaching and learning, classroom management, and educational theories are naturally a subject of discussion in foundation courses and school-based internships. However, from an empirical perspective, the question of the extent to which teacher education fosters pedagogical knowledge cannot be answered in a fully satisfactory way (Voss, 2015, pp. 204 ff.). Nevertheless, the available findings suggest that a basic academic education might be appropriate for fostering an increase of pedagogical knowledge (*ibid.*, p. 207). Several studies analysing the differences in the performances of teachers who had completed a formal teaching degree and lateral entrants without a profound body of pedagogical knowledge explain the better performances of graduates of the formal academic VET teacher training system as an indirect effect of their systematic knowledge building (*ibid.*; Kleickmann, 2011, p. 313; Kunina-Habenicht *et al.*, 2013).

Bouley and colleagues (2015) present further results highlighting the significance of practice experience of future VET teachers. According to their findings, learning opportunities outside university (prior vocational education and training, company-based work placements, completion of a full-time commercial school) have a major impact on subject knowledge in accounting. They also found that prior vocational edu-

cation and training furthermore has a significant effect on pedagogical content knowledge. These effects are partly confirmed by Fritsch and colleagues (2015), who found significant effects of university learning opportunities and prior commercial VET on subject knowledge in accounting. Pedagogical content knowledge was affected only to a low extent by learning opportunities at and outside the university (*ibid.*).

Studies exploring efficient ways of teaching that focus on the reflective competencies of future teachers currently cannot yet provide reliable and applicable findings. Case studies and seminars on biographical self-reflection have been designed for this purpose (see Luesebrink/Grimminger, 2014; Iwers-Stelljes/Luca, 2008; Rehfeldt *et al.*, 2018).

In addition to institutional and curricular differences between higher education institutions, individual characteristics also seem to play an important role in macro- and microeconomic knowledge. Parameters like sex, native language, school-leaving qualification, and prior knowledge (for example due to former vocational education or training) largely explain existing differences in macro- and microeconomic knowledge. The effects do not disappear in the course of a degree programme. Persons who completed vocational education and training before starting their studies have particularly enduring advantages (Zlatkin-Troitschanskaja *et al.*, 2015, pp. 133 ff.).

Studies confirm that school internships are valuable for teacher education students' perception of having been well prepared for their job (Mayr, 2006, p. 159). An empirical analysis with business and economics education students suggests that school-based internships connected with university teaching provide ample opportunities for the development of competencies and that students usually take full advantage of them (Seifried/Trescher, 2007, p. 13).

The efficacy of teacher education depends not only on the degree programme and the kind of learning opportunities offered but also on the students themselves, their personalities, study habits, attitudes, and motivation (Lueders *et al.*, 2006, p. 116; Mayr, 2006, pp. 156 ff.).

In conclusion, pedagogical content knowledge is a core impact factor of teaching quality and therefore should be included to a sufficient extent in teacher education degree programmes. Subject knowledge is necessary as well but can be limited, as it does no longer seem to affect teaching quality beyond a certain point. Teaching pedagogical knowledge

in foundation courses has turned out to be an appropriate approach, in particular since there is evidence that, for example, educational psychology has a positive influence on teaching quality. Both school-based and company-based internships play an important role in teacher education. Prior vocational education and training also seems to be favourable for vocational teacher education and its outcomes. Generally speaking, most of the research findings confirm the theoretical assumption that it is important for teaching students to establish themselves as educational experts with an equal grasp of both theory and practice.

Pedagogical content knowledge is a carefully considered element of the Business and Economics degree programme in Konstanz: The bachelor's programme contains 3 credits of 'Introduction to Teaching Practice at Vocational Schools' and 3 credits of subject-specific pedagogical content knowledge, the master's programme 4 credits of subject-specific pedagogical content knowledge (see chapter 5). The fact that these courses are taught by vocational school teachers underlines the relevance of a careful educational setting in this sphere even at the university, offering the students tools for their school-based internships. Pedagogical content knowledge is subsequently a topic in the teaching practice traineeship. But because of its correlation with subject knowledge, it is advisable to already include pedagogical content knowledge courses in university programmes.

Due to the affiliation of the Business and Economics Education degree programme in Konstanz with the Faculty of Economic and Business Sciences, the quality of the subject-specific courses is normally assured, although the amount of more 'applied' knowledge and discipline-based theoretical knowledge provided varies between the faculties offering VET teaching courses. Also, the currently available empirical research does not allow for generalized statements on the adequate amount of credits to be earned in business administration and economics.

Foundation courses include general pedagogical knowledge and pedagogical knowledge for vocational education and training, and more in-depth seminars are part of the master's programme. Educational psychology is provided as a mandatory lecture course in the master's programme (see chapter 5). This seems reasonable and functional in the context of the currently available research results. In light of the specific characteristics of business and economics education and its relation to

work practice, it seems consistent and logical to offer deep and detailed knowledge going beyond basic courses.

School-based and company-based internships are obligatory elements of the curriculum (bachelor: 8 + 8 credits [school-based + company-based], master: 5 + 5 credits [school-based]) and offer the students various learning opportunities outside the university (see chapter 5). The amounts of credits and the structural orientation of the curriculum cannot be assessed in detail on the basis of the current research situation. Graduates have to complete a commercial company-based internship of 42 weeks duration before being approved for the teaching practice traineeship (see chapter 5). In light of findings indicating that prior vocational education and training entails benefits for university studies, it would be advisable to complete this traineeship before becoming a university student. Students should therefore at least be recommended to do so. Furthermore, applicants who have completed an apprenticeship might be made the preferred group in the selection process of new students.

In the bachelor's programme, students build up their reflective competence by writing a bachelor's thesis containing the elaboration of and critical reflection on research on economic or business topics (University of Konstanz, 2018d, p. 35). The seminar Introduction to Teaching Practice includes intensive feedback sessions on the classes held by the students (ideally in a real-life setting at a local vocational school). Subject-Specific Pedagogical Content Knowledge in Business and Economics I focuses on scientific reflection on current aspects of and developments in teaching practice (ibid., pp. 41 ff.). The module handbook of the University of Konstanz's Master of Business and Economics Education degree programme mentions reflective competence as an objective. Through critical examination of in-depth topics of business and economics education, the students learn to present problems and to critically reflect on processes taking place in (vocational) education policy (University of Konstanz 2018e, p. 13). Concerning teaching reflection, the Subject-Specific Pedagogical Content Knowledge in Business and Economics II course at the master level includes class sessions based on case studies (ibid., p. 12). Furthermore, this is a major objective of the school-based internships (ibid., p. 16). In conclusion, reflective competence is sufficiently considered in the curriculum, although there are no indications

that particular methods mediating reflective competence are consciously applied.

7 Implications and reform impulses for Ukrainian VET teacher education

It is not possible to transfer an entire system or individual elements of a system from one country to another without first conducting an elaborate study of the goals of and the underlying conditions in the country that is to receive the reform, a thorough evaluation of the adjustment process, and a profound and detailed comparison of both systems (Beech, 2006, pp. 10 ff.; Euler, 2013, p. 6).

Vocational teacher training in Ukraine is realized at higher education institutions or their specialized faculties as well as at industrial pedagogical colleges and pedagogical engineering universities and institutes (Verkhovna Rada, 2017, Art. 46). Professionals from production industry and the service sector who have completed higher education and who aim to go on to acquire appropriate professional pedagogical training may be appointed to positions of pedagogical workers (*ibid.*). The standard of higher education for the field ‘Vocational education (in different specializations)’ is currently under development. As of 2017/2018, there are 289 higher education institutions (universities, institutes, and academies) on the market of educational services (Ukrainian State Statistics Service, 2018), 57 of which carry out vocational teacher training in different specializations (Ministry of Education and Science of Ukraine, 2018). Eight universities provide training for commercial teachers either at the bachelor or the master level or both (*ibid.*). The degree programme in vocational teacher training is offered by classical universities, by specialized (economic, technical, agrarian, humanitarian, etc.) universities, academies, and institutes, and by pedagogical universities. As a result of the limited description of the requirements for the qualification of pedagogical personnel at vocational schools and colleges and the heterogeneity of institutions, vocational teacher training is not homogeneous and variable in terms of structure, content, and practice, and consequently also in terms of outcomes with respect to professional competence.

After Ukraine joined the Bologna Process in 2005, the common ground was the two-cycle study concept, which consists of a bachelor's degree comprising 180–240 credits and a master's degree encompassing 90–120 credits (Verkhovna Rada, 2017, Art. 5). Teaching practice traineeships or/and commercial work placements after graduation are absent in Ukraine, making a university education the only means for future vocational teachers to acquire subject-specific and professional pedagogical competencies.

The scientific findings on the efficacy of vocational teacher training (see chapter 6) imply that several important aspects of the Business and Economics Education degree programme at the University of Konstanz are of great relevance for scientific research and further implementation based on foreign experiences at Ukrainian universities that provide vocational teacher training, including the training of vocational teachers in economics. The pertinent elements that are obviously needed are, first, an overall practice orientation within the system of training and, second, the cultivation of an understanding of the 'polyvalence' of this educational program, which aims at making it more attractive to students by not just educating 'pure' *pedagogues* but also training *experts* who are competitive on the labour market outside the educational system.

The practice orientation of the system of vocational teacher training at the University of Konstanz is underpinned by two facets, namely applied courses that link pedagogical theory and teaching practice and vocational school internships and commercial work placements during the course of study (see chapter 5). Such an orientation can be presumed to be one of the factors that lead to a comparatively high job placement of graduates in the public sector and their satisfaction with their professional position.

The major problems that the Ukrainian system of vocational teacher training faces are a lack of willingness among graduates of vocational teacher training programmes to work at vocational schools, their difficulties adapting to real-world working conditions, and an insufficient level of professional pedagogical competencies (Kovalenko/Bryuhanova/Melnychenko, 2005, p. 11). Graduates perceive themselves as not adequately prepared to take up their teaching duties (Stoliarchuk, p. 748). Vocational teacher training programmes might be characterized, despite the practical training involved, as rather 'science-driven', devel-

oping more (theoretical) knowledge than (practical) competence (ETF, 2004, p. 38).

Work placements temporarily transplant the students into a real professional context and have the potential to impart skills that cannot be acquired in theoretical courses or to enable knowledge from such courses to be applied in practical situations. Depending on when in the course of the degree programme the internships are completed, they may be assigned different functions (Belan, 2015, p. 129; Schubarth *et al.*, 2016, p. 7). The amount of internships at vocational schools and companies and the number of applied courses required vary between the different universities. Internships at vocational schools are worth between 4 and 9 credits and work placements fluctuate within the range of 6–19 credits at the bachelor level (Bogdan Kmelnitskyi Melitopol State Pedagogical University, 2017; Khmelnytskyi National University, 2016a; Mukachevo State University, 2017; National Transport University, 2016a). Most master's degree programmes contain only an internship at a vocational school (master's internship), which encompasses from 4 to 9 credits (Khmelnytskyi National University, 2016b; Pryazovskyi State Technical University, 2016). With regard to the correlation between internships at vocational schools and work placements, it may be concluded that practice during the programme intends to develop practical skills for experts at the bachelor level and for pedagogues at the master level.

If we take into account that practice during the degree programme is the only possibility for gaining practical experience and mastering teaching skills, the logical implication is that the educational programme should have a sufficient number of applied courses designed to help form the professional pedagogical competence of prospective vocational teachers. However, subject-specific didactics courses (Didactical Basics of Vocational Education, Vocational Education: Main Technologies of Teaching, Vocational Education: Didactical Design, etc.), which provide theoretical input on instructional concepts, teaching forms and methods, forms and methods of evaluation, and assessment of learning progress, do not exceed 14 credits at the bachelor and 4 credits at the master level (Khmelnytsky National University, 2016b; Pryazovskyi State Technical University, 2016, National Transport University, 2016b). The content of educational programs at both levels does not provide future teachers sufficient training for applying innovative activities, nor does

it develop young teachers' confidence in their own abilities by helping them to become active and independent while solving pedagogical problems and mastering their VET specialization (ETF, 2004, p. 38). The increase in teaching practice at vocational schools and in companies obviously seems to be an appropriate measure for solving the problem of the low readiness and comparatively weak professional competence of future vocational teachers in Ukraine. However, without a clear vision of the practice-oriented concept, which involves combining the acquisition of subject-specific competence with that of pedagogical professional activity competence for future vocational teachers during their degree programs and implementing a mechanism for realizing this aim, the sustainability of the reform might be called into question (Melnyk, 2017, pp. 188 ff.).

The principle of polyvalence in vocational teacher training is a requirement defined in most bachelor's and master's programmes in Germany (Reuter, 2010, p. 41). It seems reasonable to implement it in the Ukrainian vocational teacher training system. The principle aims at increasing labour market opportunities, enhancing the attractiveness of degree programmes, and necessarily also improving professional flexibility (Tramm, 2001, p. 14), which has great relevance for future vocational teachers in Ukraine.

However, there are not just professional and training problems, which have to be tackled; there are also social problems that will be much harder to overcome. The professional status of a pedagogue is not among the top interests of school leavers in Ukraine (Yehorova *et al.*, 2016, p. 79). The social prestige of science and education is low, including the profession of a pedagogue in all branches of education (Verkhovna Rada, 2013). Consequently, these factors negatively affect the enrolment of students in vocational teacher training programmes. Polyvalent degree programmes cannot fully solve these problems, but they can contribute considerably to increasing the attractiveness of this specialty and boosting the employability of graduates. A polyvalent curriculum could help foster profound abstract knowledge among students, while the practical relevance in such an education must always be demonstrated through examples (Tramm, 2001, p. 7). With an integrative concept of this kind, the course of study would be more appropriate for meeting the manifold and varied demands that its graduates face in the different professional

fields of application. It would provide a particularly broad, polyvalent qualification spectrum (companies, school, educational administration), also including the chance to focus on solutions to practical problems in cooperation with various professionals from other fields (KMK, 1999, p. 36).

8 Conclusion

Both in Ukraine and in Germany pedagogical as well as subject-specific topics are taught in vocational teacher education. In contrast to the Ukrainian system of vocational teacher education, the German system concentrates on theoretical as well as practical contents and competencies. Whereas in Ukraine there are relatively few phases of internships and applied courses, the German system relies on internships during studies, applied seminars, and a long teaching and professional practice following the studies.

This fact is closely connected with the history of vocational education and training in Germany and its theoretical “legitimation” by Georg Kerschensteiner among others (Zabeck, 2013, p. 494). From an international perspective, vocational education and training in Germany enjoys a relatively high level of esteem within society and among employers (Autorengruppe Bildungsberichterstattung, 2008, p. 115; BMBF, 2017, p. 45; Georg/Sattel, 2006).

By contrast in Ukraine, academic education, which is characterized by a high share of general contents, is in the forefront (ETF, 2016, p. 5). Evidence for this can be found in the share of academics in Ukraine, which is 82.31 % (first registrations at tertiary educational institutions) (DAAD, 2017, p. 19). In Ukraine, apprenticeships are rather considered a stopgap solution and have suffered a decline in reputation since the end of the Soviet Union. In order to safeguard one’s future and to achieve a high status within society as well as a good reputation, the completion of studies is, according to meritocratic thinking, essential (ETF, 2009, p. 73; GIZ, 2018, p. 69; Zinser, 2015, p. 687).

These tendencies are also increasing in Germany, although the long tradition of vocational education and training still restricts them (Alesi/Teichler, 2013). The practical relevance of vocational teacher education

in Germany stems from this tradition, which does not contrast general and vocational education and in this regard can in some ways serve as an example for Ukraine. However, it is also clear that Germany's VET teacher education system is not really a "system" since it is composed of different parts stemming from different historical streams of development. Also, one of the problems the country is facing now is the fact that demand for teachers is higher than what teacher training institutions can supply, especially in the technical sector (Frommberger /Lange 2018, p. 35).

Literature

A) Literature in German or English

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Fernando Marhuenda¹

The Education of VET Teachers in Spain

The Proposal of UVEG

1 The Spanish VET system

Spanish Vocational Education and Training (VET) is a mix of three different systems, each of them addressed to different target populations, each run by different training agencies, each constructed on different curricular organization, and each with their own teachers and trainers, with their own access rules and educational requirements.

This is mainly the result of the history of VET in relation to the educational system (Brunet/Moral, 2017, pp. 101), a history which has been characterized by many kinds of agencies, including overlaps among them, erected by almost every department in the Spanish Government in the past five decades. Some of them have disappeared; others have been transformed and have just come to coexist with the new models being implemented along the successive transformations.

Yet we cannot strictly speak of any proper reform in the unregulated VET until 1970 (LGE, 1970), when the second Education Act in Spanish history was passed (the first Education Act was approved in 1854, and it was the origin of massive public instruction in Spain). By the late 1960s, the technocratic government of the last years of the dictatorship decided to launch a new Education Act which would allow Spain to consolidate the strategy of economic development that had started in that decade. As part of this strategy, compulsory education was required until the age of 14, and the VET system was established, which was considered as part of the educational system and controlled by the Department of Education. This is the first time in Spanish history that we can properly speak of

1 The author of this chapter was the second director of the master's programme for secondary school and VET teachers at the University of Valencia in 2009–2010, and he was a member of the committee to coordinate its implementation that same academic year.

formal VET, and it is a school-based system: Only schools are entitled to teach formal VET.

That VET system was structured into two different levels, which were interconnected but had different kinds of content and also different requirements. The first of them was for students aged 14 to 16, required no previous qualification, and was considered mainly as a prolongation of general basic education, with the aim of reinforcing the knowledge acquired (poorly acquired in most cases) in compulsory schooling. Many academic subjects formed part of this first level. Its attendance was set as tuition-free in the mid 1970s with the aim of filling the existing gap between the age of leaving compulsory schooling (14) and the minimum age required to enter the labour market (16). Many of the participants were considered school failures, dropouts, and disaffected students, which contributed to the overall bad reputation the VET system had in almost every Spanish home.

The second level of formal VET, lasting for three years, was already a vocational one. The entry requirements to this level were either the completion of the first one or transfer from the academic track of post-compulsory secondary education through a system of equivalence. It was so that many students who were failing at post-compulsory secondary education attended to VET after not being able to successfully complete the courses leading to university. At any rate, the curriculum here was strongly vocational, leading to an intermediate level of qualifications.

In the early 1980s, the government made the necessary arrangements to develop a scheme which had already been considered by the 1970 Education Act, and which was regulated in 1976 though not used until 1984. It was the Alternate Training Scheme, which provided VET students with the opportunity to undertake work placements, on a voluntary basis, in order to complete their vocational training and to facilitate their entry into active life. The development of this programme, though it was misused, gave VET a very good reputation among employers to the extent that it changed the general opinion on this level of VET.

The improvements to the system were part of an experimental programme meant to encourage the approval of a new VET system in 1990 (LOGSE, 1990), one which involved the transformation of the whole school system in Spain and a radical improvement of the VET system and its prestige (Marhuenda, 2012, pp. 133 ff.). First, compulsory attendance

to school was brought up to the age of 16, for which a comprehensive lower secondary education was provided. Second, access to VET was restricted for students who had earned a General Certificate of Secondary Education, which radically changed the entry profile to VET. Third, there was an increase in specialization of VET through a) the involvement of employers and unions in the design and development of the curriculum for all VET qualifications and b) the introduction of a compulsory module of work placement within a company (Mas *et al.*, 2012, pp. 284 ff.).

Parallel to the developments in formal VET, there have also been two other ways of delivering VET in Spain, each of them under the control of a different authority and each completely different from the educational system (Marhuenda, 2009, pp. 252 ff.).

One of them has been run since the late 1960s by the Department of Employment to provide initial VET and qualifications to those entering the workforce after leaving the school system with no vocational qualifications at all. It was initially conceived as a means of economic development for the nation and was therefore oriented towards the needs of the productive system. A network of institutions that were completely disconnected from the educational system network developed on its own. At the beginning of the 1980s, the National Institute for Employment took charge of training duties, and training began to be considered as the best strategy for combating unemployment, especially youth unemployment. The high rates of youth unemployment, which at the time were twice as high in Spain as in the rest of Europe, and also the fact that attendance to these courses was rewarded with a small allowance made this option very attractive to many youths, also among those studying at universities, who registered at the unemployment offices and attended the courses. There was a boom in the courses taught by the Department of Employment, which made training its main activity in the framework of the successive Vocational Insertion Plans. So it was that, in the early 1990s, the Department of Employment decided to cut off all of the rewards for attending courses, which had led to indiscriminate demand and also to a flourishing business for private agencies which had signed agreements with the National Institute for Employment, with no regard for the needs of the labour market. This measure was radicalized when, in the early 1990s, it also affected those schemes addressed to marginalized sectors of the population, for which money as a reward was

a necessary element, because otherwise the participants would search for other earnings.

Another thing that happened in the mid 1980s, and even more so once Spain had joined the European Communities, was that businesses and unions started developing their own training courses addressed to their employees to try and keep abreast of new technologies and changes in work organization. This was a major issue in the mid 1990s, to the extent that agreements were reached among the government, employers, and trade unions earlier and easier than in any other area, not only in the field of training but also in that of labour relationships.

The 2002 Act on Qualifications and Vocational Education (LOCP, 2002), the only educational law not contested in modern Spanish democracy, attempted to review the three different systems and to establish some kind of coordination among them and set up the basis for a long-term planning of VET (MECD, 2011a). This happened under the perspective of a global training strategy for bringing Spain to its corresponding position in Europe and in the world economy and also in an attempt to rationalize the offerings and to obtain clear benefits from the investments in training.

2 Initial formal VET and the status of VET teachers

In this section, as well as in the rest of the chapter, I will deal with VET teachers, those working in the education system, and those in charge of formal initial VET who work either at public or at private schools; not with trainers in the two other subsystems.

The first issue worth mentioning is the status of teachers. If they work for a private school, they are employees hired according to market laws and following the requirements set up the Department of Education for teaching formal VET qualifications. These requirements affect both teachers and schools, as they are related to conditions of the location of the school, the machinery needed, and the qualifications of the teachers, among other things. The requirements are clearly defined in the prescribed curriculum for each VET qualification that is nationally approved.

In the case of teachers working for a public school, they must have passed an official set of competitive examinations conducted by the

regional departments of education, which do not take place every year. Candidates who have passed the set of exams enter a competition to test their merits against those of the other candidates, which leads to two situations: If one wins that competition, one becomes a civil servant. If not, one enters a pool of accredited teachers that will be used by the regional department of education to cover teaching needs in the public system without having civil servant status.

Among the teachers who are civil servants, there are today still two different groups of teachers: academic teachers, all of whom hold a master's degree, and practical teachers in charge of practical workshops, who not necessarily hold a master's. The latter group is disappearing, and no more positions have been made available for these teachers in the past several years, but those who have already entered the system as civil servants can stay there until the age of retirement.

The distinction between two kinds of teachers with different requirements reinforced the separation of theory and practice, following the false distinction between head and hands, the intellectual and the manual, knowing what and knowing how. This contributed to a lack of appreciation for the academic side, not only among the different vocational qualifications offered but also within each of them. At the same time, there was a rather technical – not technological – way of understanding practice as mere skills development, where no briefing or debriefing could take place but only routine repetition. As a result of this, the content of such VET training provision lacked proper connection to the world of work and failed at providing appropriate educational qualifications as well as labour-driven qualifications. The financial resources allocated to the VET schools were not sufficient to keep updated and the curriculum run the risk to become obsolete at a fast pace.

There is a third group of people involved in formal VET: in-company trainers, workers at the company who are in charge of supervising students during their placements. As workers, they do not need any specific qualifications to become trainers. They may opt to complete a voluntary training course provided by the Chambers (Cámaras, 2002), but this is neither required nor acknowledged. We cannot consider them teachers, even if they play an important part in the supervision of students while at the companies.

Let us focus then upon VET teachers. Teachers in charge of the VET system have lacked pedagogical training almost entirely for several decades, since the system was established. For those responsible for academic or theoretical subjects, there was the need to undergo an accreditation course that consisted in the 1990s of 30 hours of instruction at most (in the 1970s and the 1980s it was even limited to a couple of three-hour lectures in some regions), a course which they could attend even after being employed as teachers. The only required qualification at the time was a university degree in the subject area.

On the other hand, teachers in charge of the practical training in workshops at VET schools were coming not only from the labour market, thus bringing with them experience which would be useful, but also from the VET system itself, without any previous work experience: some of them were former VET students who had obtained access to a position as a workshop trainer within the school.

The gravity of these facts must be taken into account when one considers that almost all of the teachers at state schools either already are or are on their way to becoming civil servants.

Until recently, the system failed to provide teachers working in the VET system with an initial specific degree, in a way similar to what happened to teachers in the academic track of post-compulsory education. A modest attempt was made in some regions during the 1990s to establish so-called Centres for the Professional Development of Teachers. These constituted a network for further education for primary and secondary teachers, and to a lesser extent for VET teachers. Even though staff development has been emphasized in the past years, this has been in a restricted narrow view of what constitutes staff development: scientific updating and technological preparation, without taking into account different kinds of pedagogical considerations. This serves to demonstrate the emphasis on the subject-specific content in VET, as well as the fact that it is based upon assumptions about the teachers' roles which contribute to their deskilling and proletarianization, following a trend which can be identified across all levels of the educational system.

Let us briefly explain the fourth actor involved in VET: career services staff. The marginalization to which career services and counselling departments were condemned by the role devised for them in the structure of the system is one of the most serious problems in the system today. The

small impact of career services was due to an underdevelopment all along the educational system, which only started changing at the beginning of the 1980s. At any rate, these transformations arrived even later to the VET structure, where what contributed most to improve it was the voluntary involvement of some professionals. Even today, careers guidance is still one of the least developed areas of the VET system: both previous to the choices which have to be made at age 16 and, especially, the role of careers services alongside the vocational track. Career guidance in Spain has usually had an academic emphasis, and career services within the school system are disconnected to guidance provided by the Employment Department.

As a result of this, students have been very poorly informed about the possibilities of VET: vocational guidance has tried to enrol people in the academic track. Of course, this issue should be taken into account not only in vocational education as well as in compulsory education. However, vocational guidance has to work in close cooperation with the labour market and follow its developments to be able to help students in an increasingly complex labour and education market.

Even if the system has greatly improved over the past years, the complaints about its quality are still the same. However, no one ever dares to suggest that it might perhaps be better to extend the offerings in the non-formal sector of VET and to suppress the formal offerings as a whole.

We have expressed doubts about professionalism, responsibility, and autonomy of the teachers. If the marketization which non-formal VET has experienced reaches and becomes embedded in formal VET, barriers among both will be broken and there will be no chance left for a quality VET system.

It might perhaps be a good alternative to ask ourselves how to improve the practices of already existing teachers, how to maintain the good practices, and how to correct and amend the wrong ones, as well as to consider which structural changes would be needed in order to achieve such accomplishments.

Nevertheless, this question was avoided, and it was taken for granted that the first step should be a complete restructuring of the system, trying by this means to do away with a radical separation of the two tracks, the academic and the vocational, at the post-compulsory level. The problem is that the divide still remains after the restructuring of the system, and

it will only vanish when practical trainers, those in workshops, go into retirement, as consequence of the application of the Bologna Process in Spain. This is a category of teachers that will be eliminated in the nearest future: no more such positions will be made available and those already employed must adapt through training and an habilitation process.

3 The current status of VET teachers' education: Increasing professionalism?

It was the Bologna process that was finally been able to bring in a radical improvement in terms of the (VET) teacher profession, for several reasons. The first of them is the requirement of all VET teachers to hold a master's degree on teaching in secondary schools. This involves two conditions, the first of which is that all VET teachers must hold a university degree, a condition that some existing teachers, even civil servants, as we have seen above, are not able to comply with. The second condition is that VET teachers have to earn a master's degree, meaning that their bachelor's degree in a domain or subject area is not enough to becoming teachers and they need a pedagogical education. This is indeed an understanding of what is behind the teaching profession (Esteve, 1997, pp. 46 ff.) which introduces a clear differentiation between nursery and primary school teachers (which are bachelors in themselves) and secondary school teachers (an additional pedagogical master upon the disciplinary bachelor).

Another relevant feature of the introduction of these master's programmes in Spain is the fact that they integrate the education needed by all secondary teachers, be they lower or upper secondary teachers, be they teachers in the academic post-16 pathways or in the vocational tracks. All secondary teachers have to complete a master, which means that there are several common subjects and competencies that all teachers within the system have to comply with. There is only one master's degree, valid for teachers teaching students from age 12 onwards. There is no specific master's degree for VET teachers, as they all belong to the category of secondary school teachers.

Of course, all of this has to be framed within the context of the fact that the teaching profession is a regulated occupation. Regulated profes-

sions are those so considered in terms of mobility and mutual recognition among the different European Union countries and have a particular status for the responsibilities they entail in relation to both public authorities and society at large. Most engineering professions are regulated, as are architecture, law, most medical professions (doctors, nurses, physiotherapy, odontology, optician, chemistry, chiropody), and, indeed, teachers (at the preschool, primary school, or secondary school level; formal VET included).

In the case of VET, I explain the shape that it has taken on as regulated profession in the next subsection.

3.1 Master's programme for VET teachers: Main features and aims

First, there is Order ECI/3858/2007, approved in 2007. This is a decision made by the Department of Education of the Spanish government, a rule that applies to all regions and which frames the minimum requirements for teachers in lower and upper secondary education, both academic and vocational, as well as those teaching in official language schools. This regulation clearly states that the universities are the institutions responsible for the initial education of all these teachers, and it also establishes that the level of a master's degree is required for access to the profession. This regulation clearly states that all such master's programmes have to be officially accredited.

The duration of this master's programme is 60 ECTS credits, including a compulsory work placement for all students and requiring at least 80 % physical attendance at courses included in the programme, except in the cases of open universities, where attendance is required at least in the case of the work placement.

These work placements are framed within agreements between the universities and the regional departments of education, agreements in which the criteria for the participation of schools and teachers in the master's programme provided must be clearly stated.

An extra requirement for obtaining the master's degree is a B1 accreditation in a European foreign language according to the Common European Framework of Reference for Languages.

The different specializations of VET teachers are defined in the Royal Decree 1834/2008 (47586, 47590). They include the following:

- Cooking and bakery.
- Electronic equipment.
- Aesthetics.
- Production and installation of carpentry and furniture.
- Installation and maintenance of heating and fluid equipment.
- Electro-technical installation.
- Installation of harvest and breeding equipment.
- Laboratory.
- Maintenance of vehicles.
- Machinery, service, and production.
- Mechanizing and maintaining machinery.
- Construction design office.
- Mechanical production design office.
- Operation and equipment for elaboration of nutritional products.
- Operation of processes.
- Operation and equipment of agricultural production.
- Pattern design and clothing industry.
- Hairdressing.
- Procedures of clinical diagnosis and orto-prosthesis.
- Health and first aid procedures.
- Commercial procedures.
- Administrative management procedures.
- Graphic art production.
- Textile production and physical and chemical treatment.
- Personal care services.
- Catering services.
- Computer systems and applications.
- Welding.

However, secondary education teachers already working in the school system, including VET teachers, must follow specific regulations stated in Royal Decree 1558/2005 as well as in Royal Decree 1538/2006. These are part of the adaptation process that teachers have to undergo on account of the fact that they are civil servants, and the reforms in the system have to be introduced mainly by those who are already operating in it. It is also Royal Decree 1834/2008 which, in its article 9, establishes the obligation for all teachers to attend a master's programme consisting

mainly of pedagogical training, according to the requirements established by the LOE as well as by Order ECI/3858/2007, which regulates all official master's studies. This order also establishes the following professional competencies (art. 3, pp. 53751 f.), which all teachers must acquire alongside their master's studies:

- 1) To possess knowledge of the content of the subjects corresponding to the secondary specialization, as well as pedagogical knowledge about teaching and learning processes. In the case of VET, knowledge of the corresponding occupations must be assured.
- 2) To design, develop, and evaluate the teaching – learning process, both individually as well as collaboratively with other teachers at the school.
- 3) To search for, obtain, process, and communicate information (oral, printed, audiovisual, digital, multimedia), to transform it into knowledge, and to apply it in the teaching and learning processes of the subjects.
- 4) To define the curriculum of a school and take part in collective planning; to develop and apply pedagogical methodologies both individually and in groups, adapted to the diversity of students.
- 5) To design and develop learning sites with particular consideration of equity, emotional and moral education, gender equality, citizenship, and respect for human rights in order to facilitate coexistence, decision making, and the shaping of a sustainable future.
- 6) To acquire strategies for stimulating students' effort and promoting their ability to learn autonomously and develop thinking skills, trust, and personal autonomy.
- 7) To know the communication and interaction processes in the classrooms, to master social skills in order to foster learning and coexistence in the classroom, to face disciplinary problems, and to solve conflicts.
- 8) To design and develop formal and non-formal activities that help the school participate actively in the cultural environment of which it is part; to develop the role of administering pastoral care and career guidance to students in a collaborative manner; to take

part in the evaluation, research, and innovation of teaching and learning processes.

- 9) To know the regulations and institutional organization of the school system as well as of models of quality improvement applied to education.
- 10) To know and analyse the historical features of the teaching profession, its current situation, perspectives, and interrelation with the society in each period.
- 11) To inform and provide counselling to families about the teaching and learning process of their children as well as about their potential personal, academic, and professional pathways.

If we consider all of these competencies, we may perceive how much is required of secondary school teachers, and furthermore how much in such a short period of time, given that 60 ECTS credits imply one full-time academic year. Upon closer examination, we may also realize that some of these competencies apply more to lower secondary education than to a VET level of qualification, as they consider the student as an adolescent rather than as a young adult.

There are other skills that, though appropriate for VET teachers, cannot be acquired without work experience extending far beyond that provided by the work placement. This includes skills that refer to the school as an institution, those which require collective or collaborative work, and those which refer to the relations between the school and the environment, all of which can be initiated through the master's programme but are hard to achieve in such a short period of time.

There are also some other skills that demand of the student such a high level of consciousness and self-reflection, and even the development of a certain professional identity as a teacher, that they cannot be achieved in the course of a short master.

As such, the list of professional competencies provides a picture of what the Spanish authorities consider to be a good teacher and what the expectations about the teaching profession are.

However, this picture of a teacher runs the risk of being far too open and general, due to the fact that it entails at least three different levels of teaching. First, we have lower secondary education, where students enter at the age of 12 and finish by the age of 16. This is a level where basic

education is still being provided, where education can be considered a fundamental right, related to literacy in a sense as wide as our current society demands. Most of the situations and problems of lower secondary education are similar to those of primary education, given that attendance is compulsory. Second, there is the upper academic secondary education, the *baccalaureate*, the two years of further academic preparation whose main aim is to prepare the young generation to enter the university. This is no longer compulsory education but a voluntary option, and due to the aim it intends to achieve it has a propaedeutic nature, whose relevant dimension is improving the academic skills of young people. Third, there is VET, again not compulsory, again a voluntary choice, but one which is addressed towards the accreditation of a vocational qualification, to prepare young people to enter the labour market.

Let me also venture to suggest a fourth level of teaching, that of basic VET, intended for students who are still enrolled in compulsory school but will most probably not be able to achieve the General Certificate of Secondary Education. In this case, the role of teachers is not only educational in a very broad sense, far broader than the academic one, but also social in that they foster a successful transition to adulthood for those young people.

If one takes a look at all four levels or aims of education at the secondary stage, one might perhaps consider the choices made by the administration when regulating the master's programme for secondary teachers to be far too undefined. Most of the competencies seem to be related more to the lower secondary level than to the other two (or three) alternatives. What is clear to me is that these competencies are not specific to VET teachers but are defined in a way that leaves VET teachers on their own, that does not prepare them for some of the specificities of their educational task: the relation to companies, innovation not just in terms of pedagogies but of technologies and organization of companies, professional guidance rather than academic guidance.

Nevertheless, without taking anything away from the relevance of the definition of competencies, they are only a declaration of principles that has to be enacted in the curriculum delivered to the students. Let us turn to that curriculum.

3.2 Master's for VET teachers: Study plan

The master's programme is organized according to Order ECI/3858/2007, and it is structured into three different kinds of modules. The first is general subjects, with a weight of 12 ECTS credits, which have the following names:

- Learning and developmental psychology. This subject involves knowledge of the attributes of students, their contexts and motivations, aspects of personality, and factors that have an impact upon learning, including different capacities as well as different learning rhythms.
- Educational processes and contexts. This subject covers interaction and communication in the classrooms, knowledge of the historical and legal regulations of the educational system, pastoral care, academic and vocational guidance, education of citizenship in secondary schools, the addressing of diversity in the classroom and classroom climate, collaborative work among teachers within a school, and quality assurance.
- Society, family, and education. This subject links to education in families, the foundations of the right to education within the Spanish system, and equality regardless of differences in gender, culture, or learning.

They therefore constitute the core education of all secondary and VET teachers, consisting of an introduction to psychology, an introduction to pedagogy and an introduction to sociology. For all three of them, several publishers have brought out handbooks written by professors in charge of the respective subjects at different universities with the aim of providing a common pool of basic knowledge. In the case of the introduction to pedagogy, the following are among the best sellers: Gargallo and Aparisi, 2010; Imbernón, 2010; MECD, 2011b; and Navaridas, 2013. In the case of psychology, they include Carpio, 2010; and Vidal-Abarca et al., 2014. Finally, in the case of sociology, they are Hernández et al., 2009; Pérez, 2010; García, 2011; Cid, 2014; and Bermúdez, 2017. In all three cases, the authors include professors of the University of Valencia, as it has been the institution with the largest enrolment in the master's programme, reaching 1200 students in the first years in which it was offered.

The second set of subjects are those of a specific nature, corresponding to the particular subject area in the case of secondary academic education and to the VET specialization in our case. They encompass 24 ECTS credits and are also divided into three subjects, named as follows:

- Additional education in the subject area.
- Teaching and learning in the subject area. This subject might be understood as the pedagogical content knowledge core of the master's programme, including the history of the subjects and the different views on how to teach content to students. It is thought of as an applied subject, which addresses real situations in classrooms, and in the case of VET it includes the development of the world of work, interactions between society and work, and preparation for addressing changes in the organization of work and the introduction of new technologies. This subject also includes analysing the curriculum and working on its development and transformation into classroom practice, developing criteria for selecting textbooks or designing one's own textbooks, fostering a learning climate, including audiovisual support for learning activities, developing assessment techniques and strategies, and using assessment for the benefit of learning.
- Innovation and introduction to educational research. The relevant content of this subject includes an understanding of professional practice and identity, the development of examples of good practice, the application of quality indicators, and the ability to identify problematic situations which require pedagogical solutions. It involves applying basic research methodologies in order to put school projects on research and innovation into practice.

The second of these subjects can be clearly identified as involving subject didactics, and it is the module with the largest weight in the entire master's programme. The first subject has more to do with knowledge on the corresponding subject area, which proves perhaps redundant given that students enrol in the master's programme once they have achieved their bachelor's degree in a discipline and these 6 ECTS do not have much to add to their background. The third subject, on research and innovation, is the result of considering teaching as a reflective profession in which one must make one's own decisions and not just apply what

has been designed at the ministerial level. This is a view on teachers that has gained currency in Spain under the influence of literature by foreign authors such as Giroux (1997, 2002), Hargreaves (2003, 2005, 2008, 2014), Perrenoud (2008, 2010), Schön (1998, 2010), or Zeichner (2003, 2010), as well as Spanish authors like Gimeno (1993, 2003, 2009), Imbernón (2008a, 2008b, 2013), or Marcelo (1999, 2013), to name a few.

The third module of the curriculum of the master's programme is the work placement, named *practicum*, with a value of 16 ECTS credits, which includes both a study and practical phase in schools as well as writing the master thesis.

- Practicum. The work placement gives the student the opportunity to observe and acquire a minimum of experience in planning and delivering teaching as well as in assessing learning and evaluating professional practice. It confronts the master's student with real situations in which they have to face students in the classroom environment but also teachers in the school context. In the case of VET, this may include knowledge of the relations between the school and the companies to which it is related as well as knowledge of career guidance.

This module has been introduced differently at each of the universities offering the master's programme, varying between one extended period to two different periods. Every regional government has arranged for the specific requirements that secondary and VET schools as well as teachers at those schools must fulfil in order to have students enroll their placements.

4 The master's programme for VET teachers in the University of Valencia

In this section I will present how the University of Valencia, where I work, has implemented the master's programme for VET teachers. The University of Valencia is one of the oldest in the country, founded in 1499, named *Universitat de València – Estudi General* (UVEG being its Catalan acronym). In the mid 1970s and early 1980s, it was one of the first universities to set up a Department of Teacher Education, named Institute for Educational Sciences (*Instituto de Ciencias de la Educación*

in Spanish), which became an element of most large universities in the country and which was in charge of planning and providing the initial education of secondary teachers during the 1980s and 1990s. The name that this education received was Certificate of Pedagogical Aptitude (*Certificado de Aptitud Pedagógica*, CAP as it is known by its acronym in Spanish), regulated by Royal Decree 850/1993. This department evolved into a new one, named Teacher Education Service (*Servei de Formació del Professorat* in Catalan language), which assumed responsibility for providing teacher education to secondary school teachers.

Expanding on the handful of compulsory lectures on pedagogy and sociology (3 hours, one day of training) provided in the 1980s, the Teacher Education Service promoted an experimental master's programme for secondary school teachers in the mid 1990s. This programme was very controversial due to its elitist focus and its political bias and hence lasted only one year, but it did suggest that there was a need to improve the existing teacher education programme. The programme replacing the experimental one consisted in 10 hours of lectures on learning psychology, 10 hours of lectures on pedagogy, and 10 hours of lectures on sociology, as well as 30 hours of school visits. This mode of secondary school teacher education survived until the turn of the century, when it was updated once more and turned into the model for the current master's programme: a course of study consisting of 90 hours of theory and 30 of practice, the 90 hours divided into three modules of 30 hours each for psychological, sociological, and pedagogical knowledge.

It was in 2009 that the new master's for secondary school teachers, VET teachers included, was approved at the University of Valencia, and it has retained the same structure until today. As a novel feature, while the University of Valencia was the only institution in the entire province to offer the former CAP, the master's programme has been also implemented by four other private universities in the metropolitan area, all of them entering into a competition regarding the price of the programme as well as what is required to facilitate enrolment. At UVEG, the master's programme has required attendance and has been devised as a full-time programme, with five hours of lectures each day from Monday to Friday. It runs for a year, with lectures starting in October and finishing in early May, and it follows the structure planned by the Department of Education explained above: general module, specific

module, and *practicum*. However, there are three specific features worth considering.

First, the University of Valencia is the only university in the entire country to divide the field of education into two different schools (and even campuses): Teacher Education and Educational Sciences. Second, it has a different allocation of the weight of ECTS credits for each subject. Finally, it offers specific pathways of specialization through the master's programme for a few VET occupational areas.

To start with the latter, the University of Valencia is one of the few universities to offer specific VET pathways, namely the following: Preparation for the World of Work (*Formación y orientación laboral*, FOL being its Spanish acronym) Health; Social, Cultural, and Community Services; Business, Trade, and Tourism; Computer Science and Electronic Systems. To these, we must add the following ones, which are valid for academic secondary education: Biology and Geology; Drawing; Economics; Physical Education; Philosophy; Physics and Chemistry; Foreign Language: German, French, English, Italian, and Portuguese; Geography and History; Classical Languages and Cultures: Greek and Latin; Spanish Language and Literature; Catalan (Valencian) Language and Literature; Mathematics; Music; Counselling; Technology and Industrial Processes. Most other universities either do not offer such specializations or offer only a general VET track for most occupational sectors. In summary, this is the specific offer in terms of VET pathways:²

- Technology and Industrial Processes
- Training and Employment Guidance
- Vocational Training Area: Biomedical Specialties
- Vocational Training Area: Sociocultural and Community Services Specialties
- Vocational Training Area: Company, Market, and Tourism
- Vocational Training Area: Computer and Electronic Systems Specialties.

These pathways have been offered for the past eight years, even though there is only one group for most of them, while in most cases students

2 <https://www.uv.es/uvweb/master-secondary-education-teaching/en/master-s-degree-programme/specialisations-master-s-degree/presentation-specialisations-1285887042984.html>.

enrolling in academic pathways have the alternative to attend lectures in the morning or in the evening, which is not the case for VET pathways.

We must take into account, however, that what is required to become a VET teacher is the master's degree, no matter what pathway or specialization the student takes. This has several consequences: First, universities may offer the master's programme without different pathways, which makes it attractive in terms of lower investments and facilitates the requirement that students must be allowed to enrol at almost any university, public or private, which offers the programme. Second, any student may enroll in any pathway but they receive access to the profession no matter which pathway they choose, as it is the master that counts, not the specialization, and the master allows the student to compete at public exams to enter the profession, which are the ones assigning teachers to subject areas or VET domains. Students enroll in the master's programme without necessarily selecting a specialization in the same field in which they have obtained their bachelor's degree, which is perhaps an explanation for the 6 ECTS subject on 'additional education in the subject area'. Of course, this is an improvement over the general education provided by the CAP. However, in terms of specialization, there is much room for improving the pedagogical conditions of the master's programme.

To conclude this section, let us take a closer look at the study plan of the master's programme at the University of Valencia. This university has established that 16 ECTS credits are required in these general subjects, instead of the minimum of only 12 mandated by the Department of Education, as explained above. These 16 ECTS credits are divided among psychology and sociology (with 4 ECTS credits each, and both being taught in the first semester of the academic year) and pedagogy (with 8 ECTS credits, being a subject taught throughout the academic year), hence benefiting from the work placements in between, which are useful for both the curricular as well as the organizational dimension. The specific subjects may be chosen freely at UVEG precisely due to the broad selection of specializations, but the structure is the same for all of them: a subject for additional training in the subject area, with 6 ECTS credits; a subject about innovation and educational research in the specific subject area, again with 6 ECTS credits; and a subject on teaching and learning the specific subject (pedagogical content knowledge), with

16 ECTS credits. All of these subjects are taught in the second semester, except pedagogical content knowledge, which is taught throughout the academic year. The practicum consists of 10 ECTS credits in schools and the master thesis of 6 ECTS credits.

The practicum is divided in two periods, the first one involving observation and the second interaction and teaching in the classroom. It is meant to achieve the following aims: to critically analyse the school context; to understand how educational regulations are enacted and the school is organized; to develop collaborative work with teachers; to design, implement, and assess a teaching unit; to critically reflect upon practice in order to innovate and improve the quality of teaching; to relate practice to the knowledge acquired in the rest of the master's modules; to understand the professional role of teachers; to learn how to use ICT, textbooks, and other learning resources; and to acquire social skills to interact properly with students.

5 Critical reflection upon VET teachers' education at UVEG

As I explained at the beginning of the chapter, I was closely involved not in the design but indeed in the implementation of the master's programme during the first two years in which it was offered, and I was also in charge of lecturing in it in the first four years, when I was in charge of one or several groups, in both secondary and VET pathways, of the subject on introduction to pedagogy: educational processes and contexts. That professional and personal experience was behind my decision to leave the master's course as I was in clear disagreement with several of the decisions made by the university authorities. I will comment upon these with regard to micropolitics and its impact upon curricular dimensions of the master's programme.

The master as a micropolitical game

Internally, decisions made in the master's programme were determined by the delicate equilibrium between the two schools in charge of it, Teacher Education and Philosophy and Educational Sciences, each of which wanted to have its say while trying to prevent the other one from

increasing its power within the university (in terms of students registered and funding for each of the schools). Having two schools in charge meant that neither of them took the lead in defending the master in a confrontation with the chancellor of the university, who had only a slight interest in the master's programme.

Such conflicts have been evident in the struggle over the specific subjects of each of the pathways. The School of Education wanted to take control over the area of innovation and research, while Teacher Education wanted to keep it only for the academic specialities of the master but certainly not for the vocational ones, in which other schools (Law, Economics, Nursery, Engineering) were invited to take part, even if they lacked the necessary expertise. However, none of the schools expert in traditional disciplines (Philology, Geography, and History or the Physical Sciences Chemistry, Biology, and Physics) were invited to participate. On the contrary, the School of Teacher Education did all it could to prevent them from being involved in the programme, even in the case of professors who had been involved in the preparation of secondary school teachers throughout their careers, whereas the School of Teacher Education had only been responsible for educating preschool and primary school teachers until 2009. This conflict over power has had a negative impact on the rest of the university, and only a weak compromise between the departments and the master's programme run by the two schools has been reached.

Compounding this situation, we must add that there is a lack of staff at both the School of Educational Sciences and the School of Teacher Education, motivated by the early retirement of professors who rejected the idea of the Bologna process. Moreover, the Spanish government implemented austerity measures in all areas of civil service in 2011 to counteract the effects of the financial crisis. The consequence of this has been that the possibility of offering the master has relied largely on hiring temporary staff, who in some but not all cases were secondary school teachers. Hence, some of them lacked both the necessary academic background and sufficient professional experience. This was due to the fact that hiring procedures at UVEG are firmly stated by the institution for all disciplines and are geared towards academic rather than professional purposes. A minor effort was made to consider experience in secondary schools, though it was not a requirement.

A third point of criticism is that of the language policy of the UVEG, which introduced not just the B1 level in a foreign language demanded by the Ministerial Order as a requirement, but also a level of C1 in Catalan language. That has meant an obstacle for possible students, even though it was not an entry requirement but one for obtaining the master's degree. As a result, there have been students who have passed the master's subjects but cannot get their degree until they obtain the language accreditation, which they have to do elsewhere (or at the UVEG but by registering for a specific language course or exam).

All of these points of criticism have to be viewed in the context of the competition with other universities, both public and private, which offer easier prerequisites for enrolment in exchange for higher prices, some of them even providing master's courses for students coming from other regions over the weekend. Are these what students demand? Is this what secondary and VET schools need?

The impact on the curriculum offer

The structure of the master's programme as designed by the UVEG and one of the effects of the power struggle between the Schools of Educational Sciences and of Teacher Education has been a compromise in which the structure remains the same for all specializations and pathways, even though the same teachers are able to teach the same subjects in different pathways. While work at schools is often collaborative in nature, the decision made by the UVEG has been to keep all students separated for each pathway, hence introducing a subject, discipline, or departmental division that will not contribute to a collective socialization of teachers. While psychology, sociology, and pedagogy can be taught by the same lecturers and could provide room for interdisciplinary exchange, the organizational decisions have been made in favour of the subjects of each pathway (most of which are controlled by the School of Teacher Education).

This isolation of prospective teachers in their subject areas can in my view lead to a lower motivation of students to enter the teaching profession, to a higher isolation in their own discipline, and later on, once they have entered the profession, to rigid departmental cultures.

It may also lead to a discrepancy between theory and practice, as the master's programme is shaped according to disciplinary fields that do not

correspond directly to the everyday practice of schools, even less so if we consider that students can enrol in any pathway as long as they have a bachelor's degree.

Another effect is the strong division introduced between the general subjects and the discipline-specific subjects, something the students soon realize. General subjects are usually disregarded for lack of concreteness or specificity, as if the teaching profession were linked more to an academic culture than to a professional one. This effect is reinforced by the lack of coordination among the different subjects, which is compounded by the participation of a variety of different lecturers in the pedagogical content knowledge module, often shared by a wide array of lecturers, each of whom takes charge of subject-specific units (instead of units specific to pedagogical content knowledge). The result is that students usually face more than half a dozen lecturers in charge of both the additional subject and the pedagogical content subject, hence experiencing a juxtaposed curriculum instead of integrated knowledge.

All of the previous factors have a direct impact on the implementation of the work placement module as well as upon the direction, or lack of direction, of the master thesis. The knowledge produced during this year through these master theses has not taken into account neither previous research nor work done by former students and has had very limited impact, if any, on teaching in schools.

Let me conclude the chapter with a reference to the recent declaration of the National Conference of Deans in Education (*Conferencia de Decanos/as y Directores/as de Educación*, 2017, pp. 2 ff.) demanding clear improvements in the requirements for access to the master's programme in secondary and VET teacher education as well as improvements in equivalence among the education provided by each university. Both of these demands are related closely to the procedures for access to the teaching profession as well as the improvement of the system of continuing education for teachers.

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Business Teacher Education in Austria

1 Introduction

In Austria, business teacher education, which allows graduates to teach business subjects in full-time schools for vocational education, is carried out in the economic and social science master's degree programme *business education*. This master's programme qualifies students not only for the teaching profession but also for employment in the private sector as well as in public administration. This dual qualification offers a wide spectrum of work possibilities for graduates.

In the following, we outline the structure of the Austrian education system as well as the approaches of teacher research to illuminate the context of the *business education* master's programme. Subsequently, we provide an overview of teacher education in Austria and of the structure of the *business education* master's programme at the Vienna University of Economics and Business. Finally, we describe the implementation of the programme of study using the example of the introductory pedagogical content knowledge course *basis teacher training*.

2 The Austrian education system

The Austrian school system provides a variety of education and training options that are designed to meet the needs and interests of children and their parents. Children aged three and older can attend a nursery school, called *Kindergarten*, voluntarily. As soon as children are five years old, they must attend nursery school in a half-day form. However, *Kindergarten* is not part of the school system. In Austria, compulsory schooling starts at the age of six and lasts for nine years. One school year lasts for ten months, from September to June. There are private and state schools; in state schools, no tuition fees are charged (IBW, 2016, p. 2).

As depicted in Figure 1, in Austria every child's education starts with four years at primary school. Pre-primary education is provided

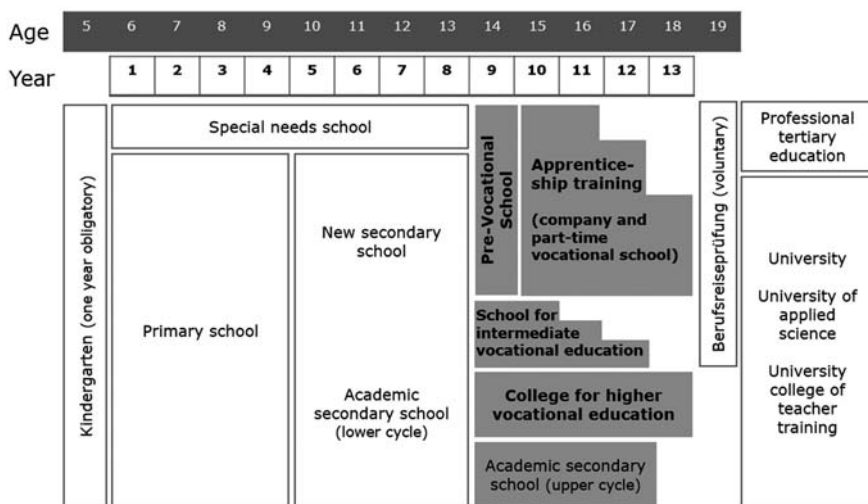


Figure 1: The Austrian education system (simplified presentation from IBW, 2016, p. 1)

for children who have reached compulsory school age but are not yet mature enough for school. Primary schools and special needs schools impart comprehensive general education to all pupils, with the objective of fostering their social, emotional, intellectual, and physical skills and abilities. Classes for children with special educational needs additionally consider children's individual disabilities (IBW, 2016, p. 2).

The first differentiation in the Austrian school system is at the beginning of lower secondary level. Schoolchildren at that stage have a choice between two types of schools that last for four years each: These are the lower secondary school and the lower cycle of academic secondary school. Lower secondary schools provide schoolchildren with basic general education, preparing them for a transfer to the upper secondary level and for working life. The lower cycle of academic secondary school, *AHS*, aims to impart a broad and advanced general education. It is offered in three branches with different focuses: as classical academic secondary school with Latin and as academic secondary school specializing in sciences or economics. In the 2008/2009 school year, the general secondary school pilot project was launched at lower secondary level. This is a school for all 10- to 14-year-olds. The curricula of *AHS* are valid for general secondary schools, but in reality, the level is lower than in *AHS* (ibid.).

For the majority of Austrian schoolchildren, the first school year at the upper secondary level is also the final year of compulsory schooling. Then they can decide between a vocational (VET) and a general education pathway. VET programmes are provided within the framework of apprenticeship training (dual system), at VET schools (*BMS*) and VET colleges (*BHS*). General education is imparted at the upper cycle of *AHS*. Depending on their interests and abilities, schoolchildren can choose between a classical, business, science, musical, artistic, and language focus. More than 70 % of schoolchildren opt for a VET programme after completing compulsory schooling (BMUKK, 2008, p. 18; BMB, 2017, p. 36).

Successful completion of *AHS* or *BHS* provides students with higher education entrance qualifications and hence access to universities. Since 1997, graduates of apprenticeship trainings, three- and four-year VET schools, and schools of health care and nursing have the possibility to take the so-called *Berufsreifeprüfung* (IBW, 2016, p. 2; AK, 2014, p. 4). This examination comprises four partial exams (German, mathematics, a modern foreign language, and an occupation-related specialist area) and entitles students to transfer to any post-secondary or tertiary institution (higher education entrance qualification). Another way to obtain the higher education entrance qualification is by acquiring the *Studienberechtigungsprüfung* (IBW, 2016, p. 3). However, it qualifies holders to study only one specific specialist area. Another way to obtain the access

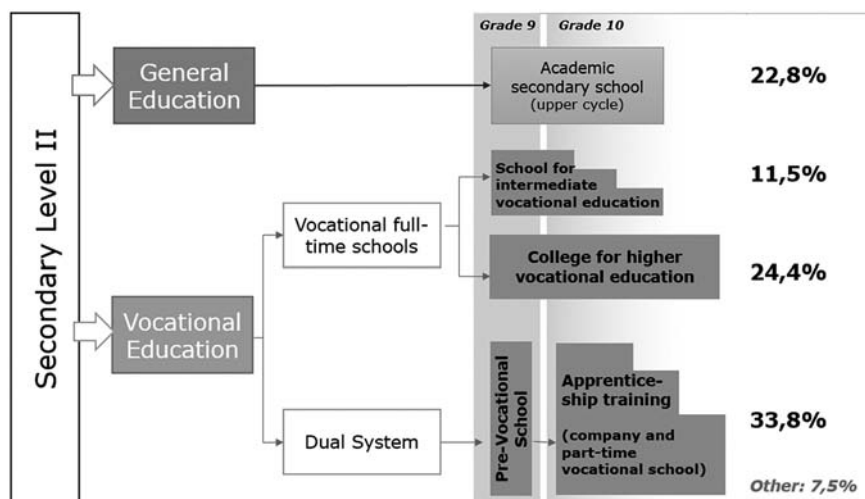


Figure 2: Proportion of school types – grade 10 (BMB, 2017, p. 36)

requirements for the post-secondary and tertiary sector is to complete an add-on course. Particular groups of people have to attend a preparatory or bridging course before entering this educational track. Graduates of add-on courses are awarded a *Reifeprüfung* or diploma certificate (ibid., p. 2).

The Austrian VET training at the upper secondary level differentiates between the dual system and full-time vocational schools. As both of these forms are virtually equal in terms of student numbers (cf. Figure 2), the next two chapters will describe both of them shortly.

2.1 Full-time vocational schools/colleges

VET schools aim to impart to students the fundamental subject-specific skills that enable graduates to exercise their occupation immediately upon completion of the programme and their general education. VET schools mostly run programmes which last for between three and four years, but there are also one-year and two-year forms. VET colleges provide higher vocational qualifications in different specializations (e. g., business, tourism, mechanical engineering, electrical engineering, etc.) and well-founded general education. VET colleges last for five years and are completed with the *Reifeprüfung* and diploma examination. Students thus acquire professional qualifications and the general higher education entrance qualification (double qualification).

2.2 Dual system

Young people who want to attend a VET programme in the dual system after lower secondary level are obliged to complete their ninth year of compulsory schooling first. In most cases, this is done at a one-year pre-vocational school. Due to the variety of subjects, company visits, and practical days at training workshops provided by pre-vocational schools, students are offered tailored guidance for their future career decisions. Subsequent apprenticeship training is provided at both the training enterprise (practical training, which makes up some 80 % of the training period) and at the part-time vocational school. The task of these vocational schools is to expand the trainee's general education and to complement the specialist knowledge and the skills they acquired at their training enterprises. Depending on the type of apprenticeship, the

training can last between two and four years, but it is usually a period of three years. At the end of the training, every apprentice can take an apprenticeship leaving examination (ÖBS, 2016, pp. 104 ff.).

3 Approaches of teacher research

The organization of teacher education requires assumptions concerning the requirements teachers must fulfil in order to practice their profession successfully. As these assumptions can relate to either the personality, the behaviour, or the competence of teachers, there are different focuses in the empirical research. Hence, three approaches of teacher education research are distinguished (Blömeke, 2009, pp. 123 f.):

- teacher personality approach
- process-product approach
- teacher-as-expert approach.

In the 1950s and 1960s the teacher personality approach was the main focus of teacher research, in the 1970s and 1980s it was the process-product approach, and in the 1990s the teacher-as-expert approach became popular (Blömeke, 2009, pp. 123 f.). The empirical research of the 21st century is also classified as belonging to the teacher-as-expert approach (Baumert *et al.*, 2010, p. 135; Brunner *et al.*, 2006, p. 522), although there is also research work in the context of the other two approaches (Fortmüller/Werderits, 2011, pp. 28 ff.; Neuweg, 2007, pp. 20 f.; Fortmüller *et al.*, 2012, pp. 17 f.). In the following subsections we provide a brief description of the three approaches and present an empirical study in the context of vocational teacher education for each approach.

3.1 Teacher personality approach

In the literature, numerous competing personality theories have been proposed (Friedmann/Schustack, 2004, pp. 20 ff.; Pervin, 1993, p. 28). Many personality constructs are only inadequately empirically ascertainable or not at all and are therefore not appropriate as a basis for empirical research of teacher personality. Consequently, empirical teacher research usually only considers selected personality dimensions and attempts to

determine their connection to the quality of teaching empirically. Examples of these personality dimensions are, in particular, self-efficacy expectations (Schmitz/Schwarzer, 2002, pp. 122 ff.) and the so-called Big Five: neuroticism, extroversion, openness to experience, compatibility, and conscientiousness. (Pervin *et al.*, 2005, pp. 322 ff.; Lang/Lüdtke, 2005, p. 30; Mayr/Neuweg, 2006, p. 188; Neuweg, 2007, pp. 20f.; Borke-nau/Ostendorf, 2008, p. 7+40).

The present empirical findings indicate that the expression of the extroversion dimension is especially important for the teaching profession. Accordingly, significant correlations have been found between the dimension of extroversion and competence and stress perception, satisfaction, and attitude, as well as the teachers' style of leadership (Neuweg, 2007, p. 20). Apart from extroversion, the four other dimensions of personality correlate with several of the indicators mentioned, which are

Characteristics of good teaching	Personality dimensions of teachers						
	Com	Con	O	N	Extroversion		
	Correlations (Beta)			Sign.	R ²	Adjusted R ²	
Structuring	not significant			0.407	0.005	0.166	0.147
Clarity				0.364	0.012	0.132	0.113
Learning time				0.349	0.016	0.121	0.102
Variety of methods				0.374	0.010	0.140	0.121
Exercise				0.426	0.003	0.182	0.164
Promote				0.356	0.014	0.127	0.108
Atmosphere				0.487	0.001	0.238	0.221
Performance expectations				0.394	0.006	0.156	0.137
Communication				0.341	0.019	0.116	0.097
Total satisfaction				0.313	0.032	0.098	0.078

Figure 3: The connections between the dimensions of teacher personality and the characteristics of good teaching (according to Fortmüller/Werderits, 2011, p. 29).

needed for coping with vocational requirements (Mayr/Neuweg, 2006, pp. 190f.; Neuweg, 2007, p. 20).

An empirical enquiry at Austrian VET schools and VET colleges found a significant connection between the extent of a teacher's extroversion and the key characteristics of good teaching – according to the ten characteristics of good teaching from Meyer (2004, p. 25) (cf. Figure 3). However, instructional quality correlates significantly only with extraversion, not with the other four dimensions of the Big Five (Fortmüller/Werderits, 2011, p. 29).

If the orientation of teacher education is based on the teacher personality approach, choosing a suitable person for the teaching profession becomes pivotal. After all, the personality can only be altered, if at all, in the very long run and hardly within a single study.

3.2 Process-product approach

In contrast to the teacher personality approach, the process-product approach is based on higher expectations concerning the learnability of the teaching profession. After all, there is the possibility to practice the teaching methods and behaviours that are vital for instructional quality. This exercise can ensue from teaching simulations, from peer teaching, or from within the teaching internship.

The goal of the empirical research in the context of the process-product approach is to identify which methods and behaviours are decisive for the teaching outcome. The resulting issue is that the interdependencies between the individual dimensions of teacher behaviour and their balance between them can be considered only partially. Moreover, the teaching content and student characteristics are often disregarded (Blömeke, 2009, p. 123). For these reasons, the empirical research has not yet resulted in definite outcomes.

Figures 4 and 5 depict the results of an empirical enquiry conducted at Austrian commercial high schools (HAK). The study follows the process-product approach. The aim of the study was to compare the learning success of classes (grades 2 and 3) taught with the COOL teaching method, that is, the cooperative, open learning method, in their accounting lessons, with the learning success of classes taught conventionally (Fortmüller *et al.*, 2012, p. 17–18). As can be seen in the figures below,

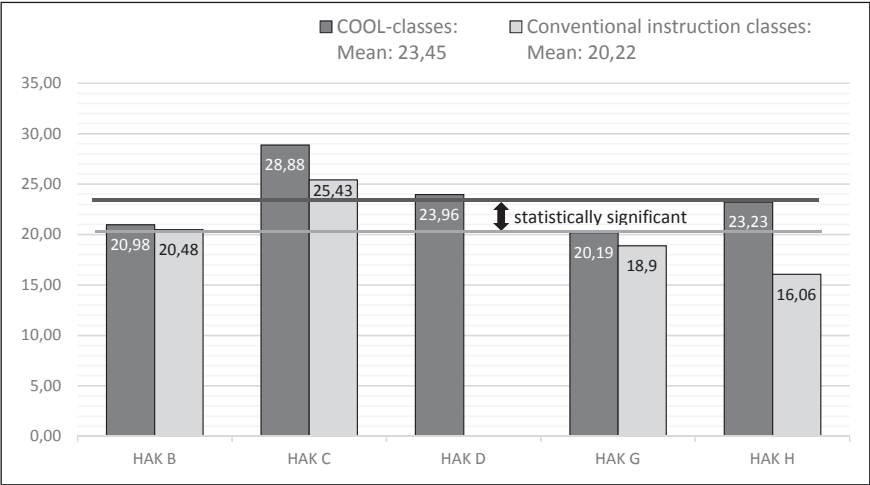


Figure 4: Mean values of the performance test results in the COOL classes and the control classes of the second grade (extracted from Fortmüller *et al.*, 2012, p. 17)

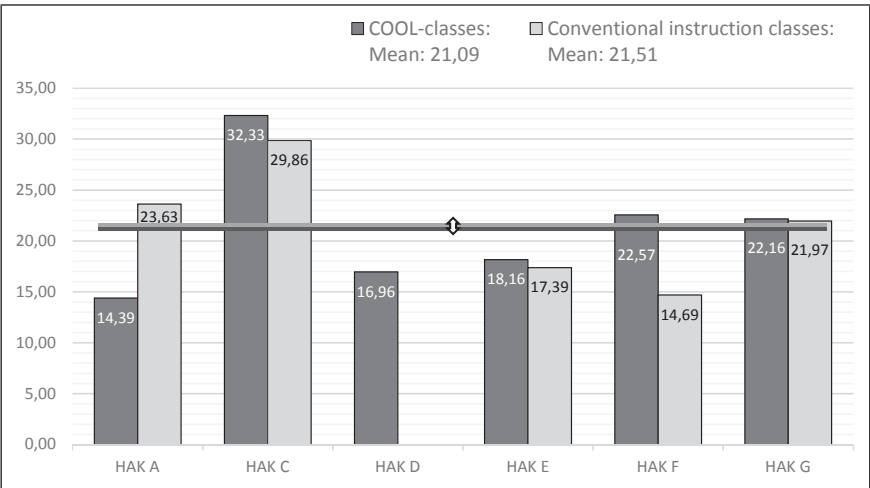


Figure 5: Mean values of the performance test results in the COOL classes and the control classes of the third grade (extracted from Fortmüller *et al.*, 2012, p. 17)

the results suggest that COOL leads to higher learning success than conventional instruction in the second grade but not in the third grade. However, there is no reason for such a systematic difference concerning the suitability of COOL for these two grades.

Due to the inconsistent research results concerning different teaching methods, the literature recommends method diversity (Meyer, 2004,

p. 25). As a result, the decision of which method to apply is up to the teacher. This requires not only the successful application of methods and the practice of respective conduct but a high level of expertise. The process-product approach thus leads to the teacher-as-expert approach.

3.3 Teacher-as-expert approach

The findings illustrated in Figures 4 and 5 can also be interpreted as empirical evidence for the teacher-as-expert approach. After all, it can be seen that the performance differences between students from different schools are higher than the performance differences between the COOL students and the students taught conventionally. This could be attributable to differences in students' prior knowledge and prerequisites but also to different teachers' competencies.

Within the teacher-as-expert approach, there is a distinction between content knowledge, pedagogical content knowledge, and pedagogical-psychological knowledge (Shulman, 1987, p. 8). The existing findings show a high correlation between the content knowledge and the pedagogical content knowledge; nevertheless, these two knowledge types cannot be fully explained by each other (Krauss *et al.*, 2008a, p. 723; Krauss *et al.*, 2008b, pp. 243 ff.; Blömeke, 2010, p. 124; Fortmüller/Grabowski, 2013, pp. Vf.).

The influence of teachers' content knowledge and pedagogical content knowledge on the students' performance progress has been demonstrated by various studies (Baumert *et al.*, 2010, pp. 158 ff.; Hill *et al.*, 2005, pp. 391 ff.). In contrast, there are only a few studies examining the significance of pedagogical-psychological knowledge (Hohenstein *et al.*, 2017, p. 92). Yet just as the studies regarding content knowledge and pedagogical content knowledge, these studies show that teachers' professional knowledge is a pivotal factor for instructional quality (Voss *et al.*, 2014, pp. 193 f.). Therefore, the programme of study of *business education* has close links to the teacher-as-expert approach; the advancement of pedagogical content knowledge in particular is embedded in the curriculum in the form of various pedagogical content knowledge courses.

Figure 6 gives an overview on the results of an empirical study about the pedagogical content knowledge of master's students of business edu-

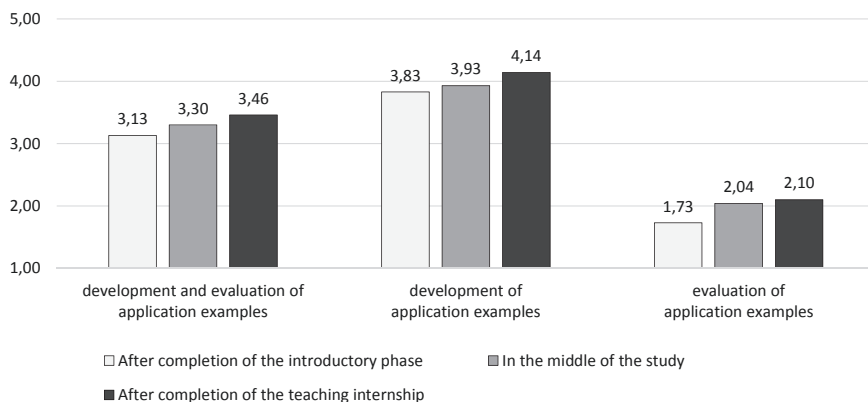


Figure 6: Test results on the ability areas of developing and evaluating application examples (extracted from: Fortmüller *et al.*, 2014, p. 31)

cation at the Vienna University of Economics and Business in the ability areas of developing and evaluating application examples.

As can be seen, students who have completed the teaching internship perform better than students in the middle of their studies. However, the latter have better test results than the students who have only completed the introductory phase. These performance differences are statistically significant (Fortmüller *et al.*, 2014, p. 31).

4 Types of teacher education in Austria

Due to historical developments, teacher education in Austria can be described as rather fragmented. For example, there are several different pathways leading to qualification as a teacher. Until recently, teachers for primary schools or general secondary schools (*Neue Mittelschulen*) had to complete a shorter degree programme at a teacher training college, whereas teachers for academic secondary schools (*Gymnasien* or *AHS*) and upper secondary schools had to complete a longer degree programme offered at universities (Mayr/Neuweg, 2009, p. 19). Currently, three different categories of teachers exist in Austria: teachers for general education subjects, teachers for business education, and practice teachers. Teachers for general education subjects teach at primary schools, secondary schools, and upper secondary schools. Teachers for business education teach business-related subjects at colleges for higher

or intermediate vocational education, and practice teachers are responsible for vocationally relevant subjects at vocational schools in the dual apprenticeship system and at certain colleges for higher or intermediate vocational education (BMBWF, 2017a). The three types of teacher education are described in the following subchapters. Only a short overview on the general teacher education and the practitioner teacher education is provided, since the focus of this article is on business teacher education.

4.1 General teacher education

As indicated above, recent reforms in general teacher education led to the result that universities together with teacher training colleges provide degree programmes for general teachers of all school types. Therefore, four-year bachelor's programmes as well as master's programmes of either two or three semesters in duration are offered (BMBWF, 2017b). The students have to choose two subjects and have to pass an introductory phase in order to be able to continue their bachelor's programme (Neunteufl/Atanasoska/Cechovsky, 2018, p. 30). After completing the bachelor's programme, the graduates can start to work as a teacher. The first year is classified as an introductory period, where the teacher is supported by a mentor. In order to qualify for a long-term contract of employment, the bachelor graduate has to finish a master's programme within five years (BMBWF, 2017c). All studies include content knowledge, pedagogical content knowledge, and pedagogical knowledge as well as practical studies. The practical studies can be described as internships in school combined with courses at the universities in which the practical experience is reflected on and discussed from a theoretical perspective (Messner/Krainz-Dürr/Fischer, 2018, pp. 137f.).

At present, four networks of teacher training colleges and universities offer these programmes. The northeast network, for example, includes teacher-training colleges in Vienna and Lower Austria as well as at the University of Vienna. Around 2300 new students begin their studies in general teaching there every year (Neunteufl/Atanasoska/Cechovsky, 2018, p. 32).

4.2 Practitioner teacher education

Teachers that work at vocational schools within the dual apprenticeship system or similar fields have to complete a bachelor's programme in vocational pedagogy. Special entry qualifications are required: a vocational master's exam or a university entry exam, a completed apprenticeship, and several years of vocational practice. Additionally, they have to already be employed as a teacher at a school. Thus, the studies have to be completed as an extra-occupational degree programme (Mathies/Welte, 2014/15, pp. If.).

4.3 Business teacher education

Compared to the general teacher education, business teacher education has a special position since it is offered solely by universities. Therefore, it differs from the general teacher education approach described in chapter 4.1, which is offered jointly by universities and teacher training colleges. Furthermore, the teaching practice is integrated into the studies. Additionally, it offers a polyvalent education that comes with several possibilities for employment.

In Austria, *business education* studies are offered at four universities (Vienna, Linz, Graz, and Innsbruck). Three universities offer a five-semester master's programme and one a five-year diploma programme. In order to be accepted to the master's programme, students have to complete an economics bachelor's programme (Fortmüller, 2010, p. 198).

A unique characteristic of the *business education* degree programme is the employability of the graduates. In contrast to regular teacher education programmes, students do not only have the possibility to work as teachers at upper secondary schools; they are also educated to work in several business-related vocations. Furthermore, it has to be pointed out that the students have to work for a period of two years in the private sector in order to qualify for regular employment at an upper secondary school (Aff *et al.*, 2008, pp. 5 ff.).

In the course of a research project carried out in 2015 at the University of Graz among 452 participants who had graduated from the *business education* programme in Graz between 1987 and 2017, the employment status of the graduates was analysed. Around 30 % of the graduates indi-

cated that they work as teachers at schools, 60 % are employed in the field of business and administration, 6 % work at universities or research institutions, and 4 % are employed in the field of adult education (Zehentner/Stock/Slepcevic-Zach, 2016/17, pp. 30f.). Consequently, the polyvalent approach of the programme becomes visible in the wide variety of areas of employment.

5 Business education master's programme in Vienna

The *business education* master's programme qualifies students for school teaching as well as for many other professional fields. The curriculum of the *business education* master's programme comprises five different categories of courses (cf. Figure 7). The basic structure of the programme is illustrated in Figure 8 (Fuhrmann, 2017, pp. 6f.).

As can be seen, the courses enhancing pedagogical content knowledge have the highest workload (44 ECTS). Moreover, the teaching internship can also be seen as a learning opportunity for the advancement of pedagogical content knowledge.

Content knowledge is already acquired in the bachelor's programme. At the start of the master's programme, this content knowledge is verified

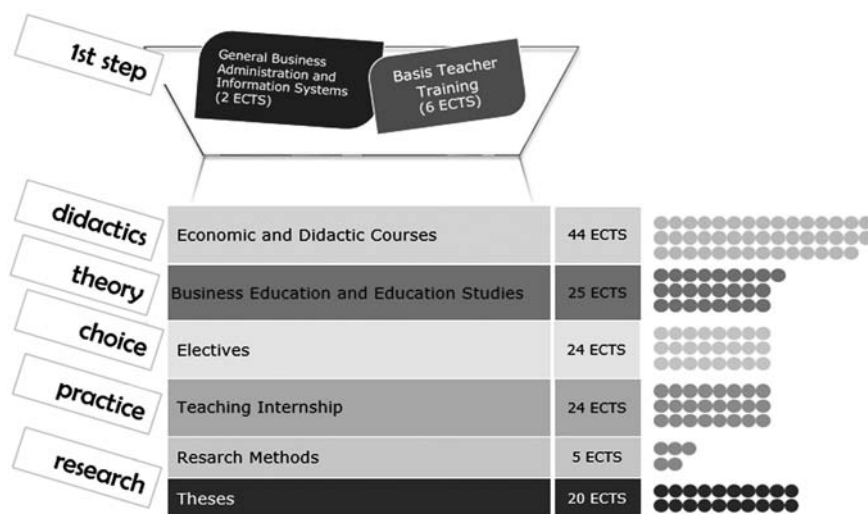


Figure 7: The main areas of the *business education* master's programme (Fuhrmann, 2017)

	1. Sem	2. Sem	3. Sem	4. & 5. Sem
General Business Administration and Information Systems	Basic Teacher Training	Integrated Business Administration I	Didactics in Business Computing	School Internship (inclusive Teaching Internship Colloquium)
		Teaching Methods in Business Administration I	Didactics in Accounting	
		Business Education I	Teaching Methods in Business Administration II	Elective II Business Administration
		Didactics in Business I	Business Education II	Elective I Business Education Course 1
		Education Studies I	Didactics in Business II	Elective I Business Education Course 2
			Didactics in Business III	Elective II Business Education Course 1
		Education Studies II	Education Studies III	Elective II Business Education Course 2
		Research Methods in Business Education	Research Proposal	Master thesis

Figure 8: Curriculum structure of the *business education* master's programme (Wirtschaftsuniversität Wien, 2015)

by an entrance exam in the fields of business administration, accounting, and business computing. This exam is part of the course *general business administration and information systems* (cf. Figure 8). During the master's programme, an extension and intensification of content knowledge occurs in the electives and partly also in the pedagogical content knowledge courses.

Pedagogical and psychological knowledge is taught in lectures and seminars of *business education and education studies* and *intensified in the electives*. Depending on the issues discussed, the course *research methods* and the writing of the *master's thesis* can also contribute to the advancement of pedagogical and psychological knowledge, of content knowledge, and of pedagogical content knowledge.

In the following, we explain the formation of pedagogical content knowledge by using the example of the introductory pedagogical content knowledge course *basis teacher training*.

5.1 Teaching of pedagogical content knowledge

One focus of the *business education* master's programme is the development of pedagogical content knowledge. This is, for example, realized by the course *basis teacher training*, which is the first course on lesson planning in business didactics in the master's programme. It involves developing pedagogical content knowledge as described by Shulman (1987,

pp. 8ff.). He specifies that this knowledge is a unique combination of pedagogical knowledge and content knowledge in specific subjects. This knowledge distinguishes teachers from other experts in a field. Shulman (ibid.) outlines four sources of pedagogical content knowledge that play an important role in the teacher-training course described here. First, content knowledge is needed. A teacher needs a deep understanding of his or her field.

In the *business education* master's programme, content knowledge is assessed through an initial exam on general business administration and information systems. This exam tests whether all of the students possess the required content knowledge in business administration, accounting, and business informatics for the courses in the master's programme.

As a second source of pedagogical content knowledge, Shulman (ibid.) names educational material and structures. Besides being familiar with curricula, teaching material, and assessment material, a teacher must also be aware of formal and informal structures, rules, and mechanisms in the school context.

In order to realize this, students are encouraged throughout the master's programme to use the curriculum as a basis for their lesson planning. Furthermore, in order to obtain insight into the school environment, the students are required to accompany experienced teachers on three school days in the course *basic teacher training*. Thus, the students can exchange opinions with teachers and get to know their future professional environment.

Third, Shulman (ibid.) points out that a further source for pedagogical content knowledge is research on education and learning. Therefore, more generic research from fields like cognitive psychology as well as content-specific empirical studies can serve as valuable input.

Throughout the master's programme, references to scholarly literature are made. Additionally, teaching is research-based and current research projects of the faculty are integrated into the courses. Furthermore, students are encouraged to inform themselves about the topic of being and acting as a teacher from a scientific perspective.

A fourth source of input for pedagogical content knowledge Shulman (ibid.) describes is the wisdom of practice. Therefore, guidelines, examples, or case studies of good teacher practice in a specific field can be used as a model for future teachers.

In the master's programme, good practice examples of lesson plans are presented. Furthermore, the students get in contact with and experience teachers during their lessons. Additionally, they are motivated to reflect upon their experiences.

5.2 Basic teacher training

The course *basic teacher training* consists of nine three-hour sessions at the university. The first three to four sessions can be described as teacher-centred. In the first session, besides getting to know each other and clarifying the goals and assessments, the lecturer provides input on teaching goals and introduction. In the second session the lecturer provides input on instruction, and in the third session he or she provides input on the application of the teaching content and feedback. In these sessions, the lecturer presents the topics from a theoretical perspective but also shows examples of application and gives the students the opportunity to apply the content. Between the sessions, the students have to develop components of a lesson plan which were discussed in the previous session. In the following sessions, a certain number of students present their work, which is then discussed and reflected upon. These sessions at the university are followed by three days in which the students accompany a teacher during his or her regular working days. There the students have the possibility to experience the school environment and to reflect upon the teaching style of the teacher and the classroom behaviour of the students. Then, the students have to develop a whole lesson plan on a business administrative, accounting, or business informatics topic of their choice. This lesson has to be held at the university. The students receive feedback from their peers and the lecturer. Additionally, the students are filmed during their lesson and thus receive the possibility to reflect upon their performance at home. The final task of the students is to prepare a lesson that is actually held at the schools. Consequently, the students can experience their teaching performance in a real school environment. The students then receive feedback from the university lecturer but also from experienced teachers. A final session at the university involves reflection on the development of the students' teacher practice as well as the course itself. To sum up, the teacher training course has four main learning outcomes. First, the

students learn how to develop and apply a traditional teacher-centered lesson in the field of business administration, accounting, or business informatics. Second, the students are enabled to critically analyse and reflect upon lessons held by themselves or by other people. Third, they learn to describe challenges of being a teacher. Fourth, they are enabled to analyse students' behaviour in a classroom according to different criteria.

The assessment can be organized roughly into three parts: lesson components, teaching simulation, and school-related activities. First of all, the students have to submit individual components of a lesson according to the model of lesson planning (Posch/Schneider/Mann, 1989). For these components, the students can score around 10 out of 100 points. Second, the students have to submit a whole lesson plan, simulate this lesson at the university, and reflect upon their performance, which accounts for around 50 % of the grade. Third, the students have to submit a lesson plan and hold a lesson at a school. Additionally, they have to formulate peer feedback and reflection on their performance as well as a report on their three school days. These components account for around 40 % of the grade.

The central teaching goal of the *basic teacher training* course is planning and carrying out a traditional lesson. The teaching content of this learning outcome is based on the Viennese model of lesson planning by Posch, Schneider, and Mann (1989), as depicted below. First, teaching goals need to be deduced from the curriculum. In order to be able to formulate clear, achievable, and assessable teaching goals, it is important to use a taxonomy (e. g., Bloom, 1965, or Anderson/Krathwohl, 2001). The teaching goals then result in a description containing a behavioural and a content dimension. Furthermore, to tailor a lesson plan to a specific target group, it is important to analyse their prior knowledge and prerequisites as well as their motivational and cognitive potential. Teachers who are aware of these characteristics can target the content towards the students. The introduction should stimulate the curiosity of the students and has to inform them about the central aspects of the topic. The instruction part should consist of an explanation answering the central questions of the topic with the support of a visualization and a practical example. The application part of the lesson consists of an exercise that helps the students apply the content they have just heard and that is of course targeted towards the teaching goal. The feedback that

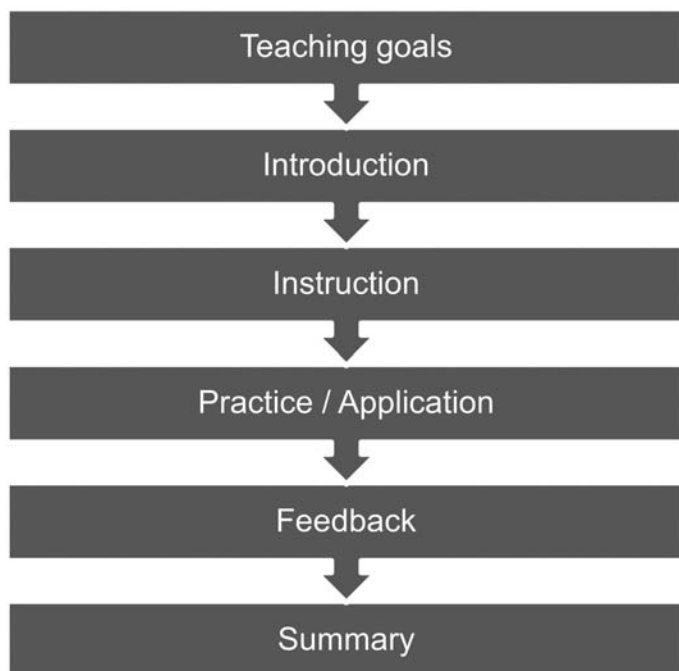


Figure 9: Viennese model of lesson planning (author's own illustration after Posch/Schneider/Mann (1989))

follows should focus on the cognitive part but can also contain affective elements that foster positive engagement. Finally, the summary helps to revise the main content of the lesson (Geissler/Pachlinger/Schopf, 2017/18, pp. 9 ff.).

The underlying theoretical teaching concept of the *basic teacher training* course is cognitive apprenticeship by Collins, Brown, and Newman (1987). Collins, Brown, and Newman (ibid., p. 16) point out that 'teaching methods should be designed to give students the opportunity to observe, engage in, and invent or discover expert strategies in context'. Therefore, they suggest a set of techniques. The first is modeling, meaning that the expert shows how a specific task is carried out. One way to realize this in the context of lesson planning is to show how teaching goals for a specific content are developed. The important thing is for the expert to externalize the cognitive process in order to make it visible for the students. A second technique suggested by Collins, Brown, and Newman (ibid., pp. 16 ff.) is coaching. Coaching means that students carry out tasks for themselves and the teacher gives them hints and points

out aspects they might not notice. In the course presented here, coaching may, for example, consist of students developing teaching goals themselves and the teacher supporting them during the process. Furthermore, the technique of scaffolding is a more active form of teacher support. The teacher has to take into account what the student is not yet able to do and therefore support them. This support, however, should be removed gradually in accordance with the development of the students' abilities (ibid.). Scaffolding in the *basic teacher training* course is realized by clearly structured exercises which are explained by the university lecturer and solved in cooperation with the students. The exercises range from evaluating existing teaching goals to developing teaching goals independently with only little support. An additional technique in cognitive apprenticeship is reflection. Reflection involves considering, comparing, and analysing different problem-solving processes as well as the results (ibid.). In this course, the students present their teaching goals and explain how they developed them. Then the group, including the lecturer, gives feedback. The main intention of the concept is to develop expert knowledge.

6 Conclusion

To sum up, vocational education as well as business teacher education in particular focus on the concept of professional knowledge. VET schools aim to provide the students with fundamental subject-specific skills that enable graduates to immediately start their occupation after having completed the programme.

In addition, business teacher education at the University of Economics and Business targets towards developing the ability of competent teaching. Therefore, the focus of business teacher education is based on the acquisition of content knowledge, pedagogical content knowledge, and pedagogical-psychological knowledge.

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VET TEACHER EDUCATION IN
UKRAINE – THE EDUCATIONAL
PERSPECTIVE

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Vocational Education and Training and the Vocational Teacher Education System in Ukraine

A Path towards Economic Development and Social Cohesion

1 Introduction

The role of VET in Ukraine at the present historical stage is to foster capacity building of the national economy, social inclusion, and sustainable development of the economy, giving a professional qualification to young people in order to support their employability (ETF, 2017a, p. 1). In order to build a competitive economy in Ukraine, to create conditions for a more efficient integration into the world's economy, and to develop scientific, technological, and innovative spheres (these goals were set in the Strategy of Sustainable Development 'Ukraine 2020' (Verkhovna Rada, 2015b); Strategy of Development of Technical Regulation for the period until 2020) (Cabinet of Ministers of Ukraine, 2015), it is important to create closer links between the labour market and the sphere of vocational education and training (VET). VET is also of great importance for the development of entrepreneurship, start-ups and SMEs, which are playing an increasingly important role in economic development (ETF, 2017c, p. 1). It is expected that VET will gradually be transformed to become a driver of growth and development in Ukraine. This brings about a need for the VET system to be aligned with the strategies and plans for development of the regions and cities in the country, its major industrial and economic sectors, for it to be linked with the market and economic reality created by the possibility of increased trade with the EU through the Deep and Comprehensive Free Trade Area (ETF, 2017a, p. 1).

The current context which creates the basis for the process of modernization in VET involves the following factors: a change in Ukraine's geopolitical course towards integration into the European Union (EU); the internal political crisis in 2014–2015 with the subsequent slow recovery; Russia's annexation of Crimea in 2014 and its permanent military aggression against Ukraine; the stagnation of domestic industry (particularly metallurgy, one of the budget revenue-generating sectors of the economy); the deterioration of economic relations between domestic producers; weakening economic potential due to the destruction of the industrial, transport, and social infrastructure in the Donetsk and Luhansk regions; an ongoing reform process associated with the decentralization of power; high employer expectations at the level of qualifications and work experience of graduates of both VET schools and universities; a lack of social guarantees (proper working conditions, remuneration, housing provision) for blue-collar workers; a lack of awareness of labour market demand among VET graduates and their low level of employability; considerable spare capacity in the labour market; a lack of employability skills; a shadow economy; informal employment (*ibid.*). Furthermore, Ukraine's labour market faces multiple challenges, such as a low level of internal labour mobility, high informal employment, and different types of skills mismatch, in particular high levels of over-qualification (ETF, 2017b, p. 12). In this context, both the general education and the VET sector are undergoing extensive changes.

The following article will provide an overview of the characteristics of the Ukrainian VET system and vocational teacher education system and of the interventions and actions that are being implemented to meet the political, economic, demographic, and social challenges.

2 The Ukrainian VET system: Structure and responsibilities

Ukraine's VET system comprises both initial vocational education and training (IVET) and continuing vocational education and training (CVET) components. As of 1 January 2018, the VET network consists of 774 institutions, both under the jurisdiction of the Ministry of Education and Sciences (MoES) and under the jurisdiction of local municipalities

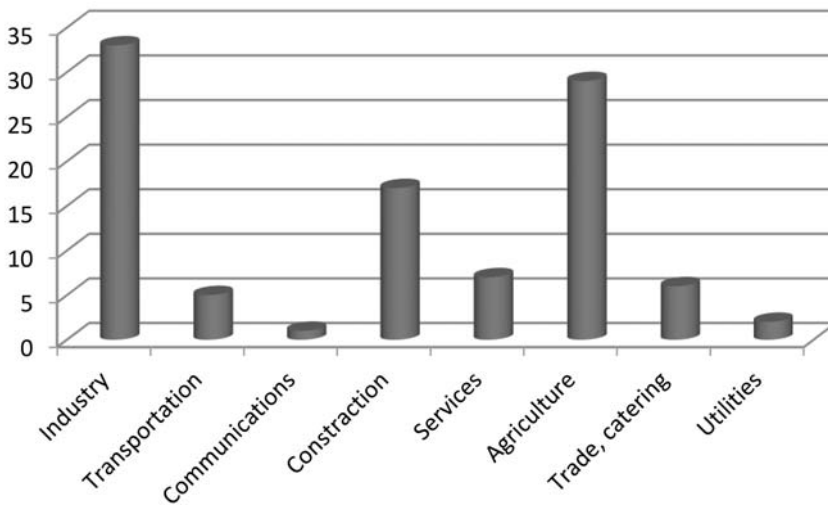


Figure 1: Sectorial Structure of VET Schools in Ukraine in 2018 (Ministry of Education and Sciences of Ukraine, 2018a, p. 6)

(Ministry of Education and Sciences of Ukraine, 2018a, p. 6). The structure of VET schools reflects the sectorial structure of the economy (see below).

Of the total number of vocational education institutions, 73 are vocational schools, 163 are higher vocational schools, 85 are vocational education centres, 338 are professional lyceums, 3 are colleges, 21 are structural subdivisions of universities, 69 are vocational schools at establishments in criminal-executive institutions, and 22 are other types of institutions. A process of reorganizing vocational education institutions in order to ensure more efficient use of funds is currently underway. Thus, during 2017 their number decreased by 32 (Ministry of Education and Sciences of Ukraine, 2018a, p. 7).

The VET system in Ukraine is structured into two levels according to the students' knowledge and skills: 'Skilled Worker' (1–3 years of training), and 'Junior Specialist' (1.5–3 years of training based on previous qualification as a 'Skilled Worker'). The 'Junior Specialist' qualification can also be granted by the higher education institution, particularly by institutions with accreditation levels I–II, that is, vocational colleges and institutes ('technikums'). In Ukraine, issues of VET at the legislative level are regulated by the Law 'On Vocational Education' (1998, amended in 2008, 2012, 2013).

According to the law, VET qualifies citizens to engage in the profession and provides them with pre-professional training, retraining, and further qualifications. Professional training or retraining of people with special educational needs in VET schools is carried out with budgetary funds. Types of VET institutions are VET schools with specific profiles, VET schools for social rehabilitation, higher VET schools, professional lyceums, professional lyceums with specific profiles, vocational and artistic schools, higher art VET schools, schools of agribusiness, higher school-agro companies, VET school-factories, centres for vocational education and training, centres for professional education, educational and production centres, centres for training and retraining of the regular labour force, training course centers, training centres, and other types of training institutions providing vocational education or training. VET institutions may provide daytime or evening classes; VET institutions carry out training, retraining, and qualification upgrades for citizens on the basis of state orders as well as agreements with enterprises, associations, institutions, organizations, and citizens. Students of state and communal VET schools who are orphans, children deprived of parental care, or children in need of special conditions of education are fully provided for by the state.

The total number of students as of 1 January 2018 was 268,298 people (6.3% of the total population in Ukraine), compared with 1,568,334 students at universities. In the case of persons graduating from institutions and obtaining a diploma as a skilled worker and a junior specialist, their number amounted to 129,439 persons in 2016, and only 111,301 persons in 2017 (due to demographic reasons and the low prestige of the VET sphere). With regard to employment, 80.8% of graduates were employed in 2016, 81.7% in 2017; 8.1% continued their studies at higher education institutions in 2016, 7.2% in 2017; 0.9% were called for military service in 2016, 0.7% in 2017 (Ministry of Education and Sciences of Ukraine, 2018a, p. 8).

In Ukraine, the executive bodies on the national level are the Ministry of Education and Science (MES), which sets priorities for VET and determines the approaches to be used; the Ministry of Social Policy, which is responsible for setting and implementing state policy on employment, labour migration, and on-the-job vocational training; the Ministry of Economic Development and Trade, which is responsible for the execution of the state order for training of qualified workers; other

ministries which govern vocational schools (particularly the Ministry of Agriculture), which are responsible for the implementation of VET state policy at the vocational schools under their jurisdiction (Verkhovna Rada, 2015a).

The executive bodies on the regional level are regional VET governing bodies (the VET departments of regional state administrations), which are responsible for implementation of state VET policy; VET institutions (responsible for organization of educational, training, financial, economic, and business activities; development of curricula and training programmes based on standard curricula; definition of the regional component of VET content; organization of on-the-job training at companies; planning of enrolment quotas with VET governing bodies, taking into account the state order, labour market needs, and input from enterprises and organizations about their needs (ibid.).

The government of Ukraine recognizes education as a fundamental right and is committed to providing every citizen access to lifelong learning opportunities and improving its quality (ETF, 2017b, p. 4). The basic principles of the legislation regulating VET in Ukraine are equal access to VET education, equal rights to vocational choice, and the provision of VET by the state, since VET responds to social and personal needs. The new legislation sets conditions for the decentralization of VET, which enables rapid managerial decision-making and allocation of funding and strengthens the role of local executive authorities and local self-government bodies in the training in accordance with regional skills needs (ETF, 2017a, p. 14).

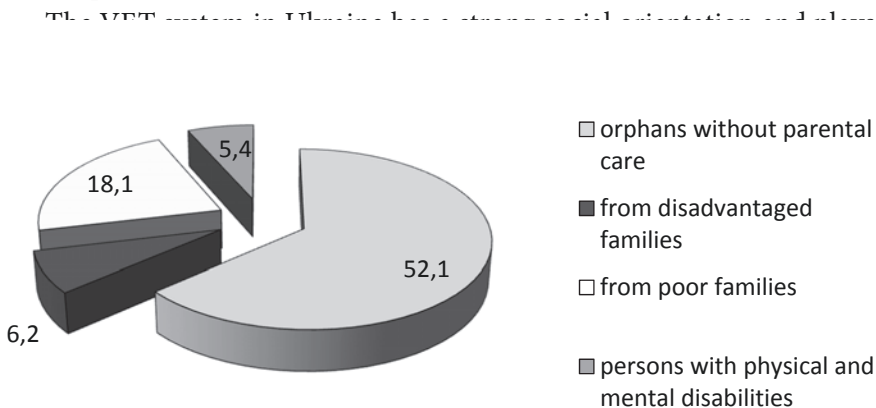


Figure 2: Categories of vulnerable groups among VET students (ETF, 2017a, p. 12)

VET system provides initial vocational education for vulnerable groups, as is shown below. The VET system also plays an important role in supporting vulnerable population groups, particularly orphans, children without parental care, and people with special needs. These groups are guaranteed preferential treatment when they enrol at VET schools. Their training and retraining is funded from the state budget. They receive funding and rehabilitation assistance during vocational training, and they are guaranteed employment after graduation.

3 Modernization of the Ukrainian VET system

3.1 Needs and defined targets and priorities

There is a strong need for modernization of the VET system in Ukraine for the purpose of assisting social cohesion and economic development as well as changing the education and training system from a system for knowledge acquisition to a system that can equip young people with the necessary skills and competencies to help them to be more successful in life (ETF, 2017a, p. 3). In the context of European integration, the main directions for the modernization of the Ukrainian VET system are defined for the period until 2020: prestige and inclusivity of VET, quality-based initial VET, career-oriented VET, flexible training pathways and a variety of educational subsystems, compliance with European educational systems with transparent qualifications systems and support for VET students' and teachers' international mobility, high-quality information support, sustainable management and quality assurance (ibid., p. 4; ETF, 2017b, p. 6).

The main targets that have been defined for VET with the aims of making it more efficient and meeting the needs of the economy are the following (ETF, 2017a, p. 9):

- introduction of a scientifically based system for forecasting labour market trends that can take into account the actual conditions and trends of the economy; creation of an efficient mechanism to ensure cooperation between central and regional authorities and social partners with respect to publicly financed investments in VET and skills development

- change of the management model based on the control of VET institutions' activities to a model based on quality assurance and management
- comprehensive funding for the VET system
- increased attractiveness and promotion of VET to enhance the prestige of blue-collar occupations and create a positive image of VET schools (using such tools as regional exhibitions of skilled-worker occupations, development of career guidance, and counselling services for children and young people)
- modernization of the network of VET schools to meet the needs of the state economy and regional labour markets, including a reorganization of the VET school network to bring it in line with the regional development plans for VET development; an increase in the average size of teaching staff at VET schools to create optimal conditions for training and quality assurance
- implementation of PPP in VET through the creation of modern educational and practical centres (EPC) for the different sectors, with investments from employers and from the state budget; the creation of at least one modernized multi-functional VET centre in every region; the strengthening of the material-technical base of VET schools, including the introduction of modern technologies; implementation of elements of the dual system in VET; training for teaching staff (internship) at educational and practical centres
- enhanced attractiveness of VET through the introduction of efficient vocational orientation programmes for young people (holding of regional, sectorial, and national competitions of professional skills among VET school students and young workers; participation in international professional competitions, in particular WorldSkills; organization of career guidance activities, etc.).

The following priorities have been identified for VET: reform of the legislative framework for VET to bring it in line with European standards by adopting the laws 'On Education' and 'On Vocational Education'; decentralization of VET governance and financing and optimization of the network of VET institutions; modernization of VET content through the development of competency-oriented educational standards based on occupational standards; development of the entire VET system com-

prising initial VET (IVET) and continuing VET (CVET) in accordance with the concept of lifelong learning; measures for enhancing the life opportunities of citizens and increasing their mobility in the labour market; implementation of public – private partnerships (PPPs); implementation of the national qualifications framework (NQF); improvement of the image of blue-collar occupations in society (*ibid.*, p. 2).

The National Strategy for Educational Development in Ukraine for the period up to 2021, approved by the Decree of the President of Ukraine № 344/2013, dated 25 June 2013, provides the following:

- development and implementation of occupational standards for occupations and clusters of qualifications, including the update and approval of an optimized list of occupations (reducing the overall number through integration)
- update and approval of the classifier of occupations (reducing the number of occupations through integration)
- optimization of the network of VET schools of different types, vocational specialization and types of ownership, taking into account population projections, regional specificities and labour market needs, the increasing independence of schools, and the creation of industrial and training complexes
- improvement of the mechanism for state order formation to take into account the current needs of the economy and the regional labour markets as well as societal demand
- enhancing the training, retraining, and further training of VET teachers
- introduction of two-level training in vocational schools: level one, Skilled Worker, and level two, Junior Specialist (Master, Technician).

3.2 Actions and reforms

In recent years, there has been a shift from an approach based on educational content to a competency-oriented approach. National VET standards for specific occupations are now developed on the grounds of a competency-based approach, and the emphasis has been transferred from the standardization of the content of training for skilled workers to its outputs. After the National Qualification Framework (NQF)

was adopted by a resolution of the Cabinet of Ministers of Ukraine in 2011 (On Approval of the National Qualifications Framework, 2011), the process of implementing this framework in the VET system got underway. The implementation plan for National Qualifications Framework development has been developed with a view to ensuring consonance between the educational system and the labour market. Methodology for the development of competency-based state VET standards for specific occupations has been adopted. The National Classifier of Ukraine, 'Classification of Occupations', has been amended to introduce training for new universal occupations.

With a view to training a competitive workforce, progressive training and practical centres dedicated to the introduction of innovative technologies are being set up with the assistance of social partners. Within the VET system, sectorial skills councils are an instrument for allocating responsibility and fostering communication and sharing between VET institutions and the business community. As a means of improving the professional development of VET teachers, the Procedure on the Advanced Training of Pedagogical Workers in VET Institutions (Instruction of the MES, 2014) was adopted. This procedure provides mandatory advanced training for VET teachers at least once every five years at postgraduate educational institutions, universities, VET training centres, and VET schools (ETF, 2017a, p. 12).

Moreover, there has been an improvement in the internal efficiency of the VET system at both the national and the regional level as part of the decentralization. At the national level, this work has been carried out in a number of areas, including improving teacher performance; standardizing VET content; implementing innovative educational technologies and methods; and enhancing the flexibility of the VET system and individual learning pathways through the recognition of non-formal learning outcomes (*ibid.*, p. 7).

The work on VET standardization is ongoing. New national competency-based VET standards are being developed, including ones based on occupational standards elaborated by employers. In 2015, the Procedure for the Development, Approval, and Review of Occupational Standards was developed and recommended for application by the Joint Representative Body of Employers. In 2015 and 2016, 27 and 25 occupational standards, respectively, were approved under the procedure (*ibid.*, p. 9).

The ongoing process of VET decentralization is recognized as a prerequisite for adapting skills, competencies and vocational qualifications to the needs of the local economy. Decentralization is not only a simple transfer of power from the state to lower levels of governance; it is also seen as a complex redistribution of roles and responsibilities to appropriate levels of governance and involves adapting old mechanisms for rule making, decision making, and funding while creating new ones for VET policy coordination (ETF, 2017c, p. 2). However, progress on decentralization has been slow. This is mainly due to the lack of effective coordination mechanisms between state actors in building a vision for the new system, in implementing new VET policies, and in ensuring the consistency and efficiency of the decentralization process (ETF, 2017a, p. 3). Moreover, the decentralization process has faced serious challenges due to the lack of a relevant legislative and regulatory framework and a shortage of financial resources in the regions (ETF, 2017b, p. 3).

A new vision for the social role of VET in Ukraine has been created on the basis of modern concepts of accessibility and inclusiveness, providing equitable access to education, employment, and lifelong learning for all citizens, regardless of age or ability (ETF, 2017c, p. 3).

Meaningful changes have been developed within the VET network. For example, a network of so-called educational and practical centres (EPC) is being developed at vocational schools to provide training in advanced manufacturing technologies. The main functions of EPC are the introduction of modern technologies into the educational process, the professional training of unemployed people, the training of skilled workers in accordance with modern occupational standards and needs of the labour market, the conducting of vocational guidance work, and the organization of VET teacher training. In 2016–2017, 50 EPCs were created (100 million UAH were allocated from the state budget for their creation). By the end of 2020, the government plans to create an additional 125 EPCs, and expenditures from the state budget for their creation are planned to be 400 million UAH (Ministry of Education and Sciences of Ukraine, 2018a, p. 6).

The new law of Ukraine ‘On Education’ was adopted on 5 September 2017. It defines the purpose of VET as forming and developing a set of professional competencies which are necessary for professional activities in a particular profession in the relevant field, ensuring com-

petitiveness in the labour market, mobility, and lifelong career growth prospects. Levels of VET are the first (initial) level (a person may be qualified at the second level of the National Qualifications Framework [NQF]); the second (basic) level (a person may qualify for the third level of the NQF); the third (higher) level (a person may be qualified at the fourth level of the NQF). Professional (vocational) educational institutions have the right to carry out, according to the relevant standards, training of specialists whose competence corresponds to the fifth level of the NQF. The licencing of such educational activities and the accreditation of relevant educational programmes are carried out according to the standard procedure. VET institutions provide training, retraining, and advanced training for individuals at the expense of state and/or local budgets as well as on basis of agreements with enterprises, institutions, organizations, individuals, and/or legal entities.

In recent years, Ukraine has made further progress, notably in developing new strategic documents:

- The 10-level NQF – a significant step towards transforming the Ukrainian education and training system and moving towards a system centred on learning outcomes and responding to labour market demands (On Approval of the National Qualifications Framework, 2011). One recent achievement is the adoption of a new Action Plan for Implementing the NQF 2016–20 (adopted in December 2016). The list of professions with state significance has also been approved. The Association Agenda foresees a functioning NQF by 2020 and highlights the development of entrepreneurial human capital as a key factor in the economic and social integration of the EU and Ukraine. There is also a reference to comparability with the EQF (ETF, 2017b, p. 5).
- On Workforce Professional Development Act, which regulates issues relating to formal and non-formal vocational training provided directly by employers to employees, either at the workplace or at vocational schools, on a contractual basis.
- On Employers' Organizations, Associations, their Rights and Activities Guarantees Act, which regulates the role of employers and their organizations in the formation of the state order for skills training and the harmonization of national occupational standards. It also regulates students' remuneration during on-the-job training.

In addition, the Ministry of Education and Science of Ukraine developed a document on the conceptual foundations of the reform and the development of VET of Ukraine called 'Modern Vocational Education'. This document explains the directions of changes in the VET sphere and defines the consolidated goals, objectives, paths of development, and key components of a modern Ukrainian VET system. Among other issues, it highlights the following questions: How will decentralization of management and multi-channel financing affect the development of VET? How can personal lifelong professional development be brought into line with the needs of the economy and employers in the relevant professional qualifications? What factors will ensure the quality and attractiveness of VET? How is it possible to realize the potential of social partnerships in VET? (Ministry of Education and Sciences of Ukraine, 2018b, p. 3).

Now the draft law 'On Professional (Vocational) Education' is being prepared, which is being discussed by various authorities at various levels. The draft Law on Professional (Vocational) Education brought the NQF back onto the table. It is considered as an instrument for supporting lifelong learning and placing a stronger focus on competencies and more relevant qualifications (ETF, 2017b, p. 7). The draft Law on Vocational Education is still awaiting discussion in the Parliament.

3.3 Perspective and recommendations for future actions

Currently the VET system in Ukraine still faces several problems which have to be solved in the nearest future:

- 1) A mismatch of skills and qualifications with the needs of the economy and with the changing societal and technological environment remains an important cause of the under-utilization of the labour force and recruitment bottlenecks for Ukraine.
- 2) There is still no effective system for forecasting national and regional labour market demand in terms of skills, competencies, occupations, and qualifications.
- 3) VET is not explicitly linked to the global competitiveness of Ukrainian industry, to lifelong learning, or to entrepreneurship and innovation.

- 4) As the VET system has to maintain vulnerable VET students at public expense, there are little funds left over for the development of VET or for upgrading material and technical resources.
- 5) There has been a reduction in the VET student population owing to the demographic crisis as well as the low attractiveness of vocational education (ETF, 2017a, p. 9–12; ETF, 2017b, p. 5–9; ETF, 2017c, p. 1–7).
- 6) There has been a reduction in the teaching staff from 47,500 (as of September 2014) to 37,900 (as of September 2016), including 16,900 workshop trainers and 13 600 teachers (ETF, 2017a, p. 8).
- 7) Work-based learning is still a problematic area because of the following obstacles: a lack of motivation and financial support/tax incentives for employers implementing work-based learning practices; a lack of relevant teaching and methodological tools (in the past 10 years, only 30 % of the planned textbooks have actually been published, and in the last four years, textbook publishing has been suspended entirely as a result of limited financing) (*ibid.*, p. 9).
- 8) There is no long-standing practice of involving of all stakeholders in VET policy and in strategy development and implementation. Communication between the VET system and employers in Ukraine revolves around such issues as the development of the NQF and the National Qualifications System, the elaboration of national VET standards, the recognition of non-formal learning outcomes, and work-based learning. However, employers are not yet ready for systematic financial involvement (*ibid.*, p. 10). The current legal and financial framework does not facilitate public – private partnerships, which could provide new sources of funding for the VET sector. Public – private partnerships can be practical mechanisms for sharing resources such as equipment, laboratories, and workshops as well as for developing new VET programmes, on-the-job training, internships, and regional and sectorial development (ETF, 2017c, p. 5).
- 9) VET institutions lack real independence, self-sufficiency, and responsibility in making decisions concerning the development of academic freedom, the organization of the educational process, the content of educational activity, internal governance, economic and other activities, and independent staff selection and placement (ETF, 2017a, p. 11). The autonomy of school directors is often limited by

regional staffing quotas, which determine the maximum number of staff they can employ. Employing more staff is considered a breach of budget discipline, while employing fewer staff is a tactic often used to increase staff salaries, with obvious consequences for the quality of offerings. At the same time, it is difficult to dismiss staff but equally difficult to hire owing to low salaries (ETF, 2017c, p. 4).

- 10) The role of decision-making powers at the national, regional, local, and school levels in steering VET policies is unclear. At present, the VET system is fragmented, with funding coming from regional capital city budgets as well as from regional budgets. This means that some schools are adequately funded and others chronically under-funded (ibid., p. 3).

Taking into account the above, we believe that the modernization of VET can turn the system into an important factor in the sustainable growth of the innovative potential of the national economy and society as a whole and create the prerequisites for the development of a 'knowledge-based economy' as well as for the professional development of the individual. This will require changes in the structure and content of VET. First of all, there is a need to create an effective structure for the VET system, to update VET content on the basis of occupational standards, to implement a competency-oriented educational process, and to create a modern educational environment in VET institutions.

Taking into account the sectorial specifics of the activities of VET institutions and their locations, the optimization of the VET network should proceed in accordance with the following principle: In the cities at the regional (oblast) level, lyceums have to be established along with multi-profile and single-profile professional colleges. In the cities of regional (rayon) significance, villages, only multi-profile VET schools should be established in order to ensure equal and qualitative access to vocational education.

Educational and practical centres should be established at professional colleges and lyceums to offer VET students training in modern production technologies, and the VET institutions should also include qualification centres for validating the results of training. Important structural subdivisions of VET institutions should include marketing services and professional career counselling centres. This will make it

possible to predict the future needs of the labour market in terms of qualifications and to advise young people and adults on choosing and building career strategies.

The updating of the content of vocational education involves the development of occupational and educational standards based on models of competencies as well as sectorial and regional features. In particular, professional competencies should be defined as conditions for performing certain types of work or professional activity. Accordingly, it is necessary to create general professional competency models that take into account a certain sectorial and professional orientation and key competencies for self-realization, development of the active civil position of trainees, social inclusion, and adjustment to the labour market.

The transition to an ecological, low-carbon economy is leading to the emergence of a significant number of 'green' jobs and therefore requires the development of new qualifications and educational programmes for creating additional skills geared towards the use of 'green technologies' in professional activities. Mastering such competencies enables VET students to further their personal and professional development.

Modern educational processes have to be based on the principles of increasing the share of production training and industrial practice with the aim of developing professional competencies and increasing the ability of students to perform qualified work or carry out professional activities.

The modern educational environment of VET institutions should be aimed at forming the personality of a professional – an innovator and a citizen capable of professional activity at the level of national and European standards. The social and physical environment, programmes, technologies, methods, and means of education are subject to change. ICTs will be introduced systematically in all types of activities at VET institutions as a means of encouraging inclusive vocational education. For students with special needs, more favourable conditions have to be created. Special training programmes as well as correctional and rehabilitation measures have to be developed, and appropriate psychological and pedagogical support has to be provided.

In the realization of the above tasks, an important role is assigned to teachers of VET schools, who should show a high level of readiness for innovative professional pedagogical activity, the ability to carry out

theoretical and practical training and education of future specialists, the ability to develop and select educational programmes and didactic teaching methods, and the motivation to engage in lifelong personal and professional development (Radkevych, 2017, p. 28). There have been developments to improve the system of further training for VET teachers and trainers through the drafting of relevant legislation. The MoES of Ukraine approved the Procedure for Further Training of VET Teachers and Trainers in 2014 and the Ministry of Social Policy of Ukraine introduced the regulation 'On Approving the List of VET Institutions for Internships of Workshop Trainers, Teachers of Vocational Training, and Teachers of Special Vocational Subjects' in 2016. Significant efforts for ensuring the continuing professional development of VET teachers and trainers have been made by VET training and methodology centres, which are available in every region. These centres provide course-based further training and internship services.

4 Ukrainian vocational teacher education system

Despite the 25-year-long decline of the Ukrainian VET network from 1246 to 774 (or 36%) schools, there are still problems recruiting highly qualified teaching staff. In general, the proportion of vacant staff positions at Ukrainian VET schools was 14% in 2017. Thus, the average availability of teaching staff is 86%.

4.1 Teaching staff at VET schools: categories, regulations, requirements

The main categories of teaching staff at VET schools according to Article 45 of the Law of Ukraine 'On Vocational Education' are teachers, vocational teachers, instructors, masters of industrial training, senior masters, senior masters of industrial training, instructors of in-service training, methodologists, practical psychologists, social educators, physical education leaders, principals of vocational educational, scientific-methodical, and educational institutions, their deputies, and other employees involved in the educational process.

In April 2002 the State Classificatory introduced a new occupation, 'VET teacher (according to their training profile)', which is a combination of a teacher of theoretical subjects and practical (industrial) training cycles. The tasks and responsibilities of VET teachers include providing vocational theoretical and practical training, retraining students (trainees), and ensuring the implementation of regulations on the organization of the educational process, the curriculum, and vocational training programmes. VET teachers are personally responsible for creating a safe learning environment in classrooms, laboratories, and workshops. VET teachers also provide instruction and individual counselling of students (trainees), prepare workplaces, and provide students with instruments, consumables, and supplies. In the period of apprenticeship and industrial practice, VET teachers select jobs and accompany students (trainees) to workstations according to schedules, curricula, and programmes. VET teachers select bases of apprenticeship and create draft agreements with enterprises. They also provide students (trainees) with training for their final qualification examinations and help to conduct the examinations. VET teachers monitor performance, attendance, and execution of internal regulations and behaviours. Furthermore, they manage educational activities with students (trainees). VET teachers plan and supervise training work, write reports, and support cooperation with the state employment service and employers on the issues of graduates' employment. They also ensure that students adhere to the internal regulations of the institution. VET teachers develop and improve the organization of educational work with students (trainees), implement practical recommendations for pedagogical science and innovative professional training technologies, including module training. They also monitor the educational process, questioning students (trainees) to improve methods of professional training, examine individual characteristics of students (trainees) and take them into account during the educational process, and develop their occupational and educational competencies (Ministry of Education and Sciences of Ukraine, 2013).

The VET teacher should be familiar with the fundamentals of engineering, technology, industrial production, the prospects for its development, methods of organization and forms of theoretical and practical vocational training, the use of technologies, the fundamentals of pedagogy and psychology, regulations on the organization of the educational

production process in vocational school, safety requirements, rules and norms for safe organization of work, sanitation requirements and other rules and regulations established for defined areas, and the fundamentals of legislation on the educational and production process. Thus, the occupational requirements for VET school teachers include both competencies in didactics and competencies in the production sphere which is being trained at the particular vocational school. The system of VET teacher education therefore includes both teaching and professional components (ibid.).

Qualification requirements of VET teachers (according to their categories) are (ibid.):

- *A VET teacher of the highest category should have* a university degree (specialist or master's degree) and psychological-pedagogical training or a completed higher engineering pedagogical education (master, specialist); at least 2 years of professional experience in the position of a VET teacher of the 1st category.
- *A VET teacher of the I category should have* a university degree (bachelor's or master's degree) and psychological-pedagogical training or a completed or basic higher engineering pedagogical education (master, specialist, bachelor); at least 3 years of professional experience in the position of a VET teacher of the 2st category.
- *A VET teacher of the II category should have* a university degree (junior specialist, specialist, bachelor's or master's degree) and psychological-pedagogical training or a completed or basic higher engineering pedagogical education (junior specialist, specialist, bachelor's or master's degree); professional experience in the position of a VET teacher (without category) – for junior specialists at least 2 years, for masters and specialists at least 1 year.
- *A VET teacher should have* a university degree (junior specialist, specialist, bachelor's or master's degree) and psychological-pedagogical training or a completed or basic higher engineering pedagogical education (junior specialist, specialist, bachelor's or master's degree).

4.2 VET teacher training in Ukraine

VET teacher training is regulated by the constitution of Ukraine, the national doctrine of education in Ukraine, the laws of Ukraine 'On Education', 'On Higher Education', 'On Vocational Education', and 'On science and scientific and technical activities', the concept of teacher education, the concept of vocational (professional) education, conceptual principles of teacher education and the integration of Ukraine into the European educational space, the regulation on educational qualification level, and state education standards.

The decree of the Cabinet of Ministers of Ukraine of 29 April 2015, №266 'On approving the list of disciplines and specialties for training of students in higher educational institution', approved the 015 specialty 'Professional education (with specializations)' within the field of knowledge 01 'Education'.

The law of the Ministry of Education and Science of Ukraine from 21 March 2016, № 292, approved the list of specializations of higher education in the field 015 'Professional education (with specializations)'.

Table 1: List of specializations of higher education in field 015, 'Professional education (with specializations)' (Law of Ministry of Education and Science of Ukraine from 21.03.2016, № 292)

015.01	Construction
015.02	Publishing
015.03	Mining
015.04	Woodworking
015.05	Documentation
015.06	Electronics, radio technology, and telecommunications
015.07	Electrotechnology and electromechanics
015.08	Energy
015.09	Welding
015.10	Computer technologies
015.11	Mechanical engineering
015.12	Metallurgy
015.13	Metrology, standardization, and certification
015.14	Oil and gas production

015.15	Labour safety
015.16	Service sector
015.17	The technology of the consumer goods industry
015.18	Technology of producing and recycling agricultural goods
015.19	Merchandising
015.20	Transportation
015.21	Nutrition technologies
015.22	Chemical technologies

Under current law, the training of future VET teachers is carried out at the following educational qualification levels (Verkhovna Rada, 2017b):

- Junior Specialist – corresponds to level 5 of the National Qualifications Framework (NQF), the European Qualifications Framework for Lifelong Learning (The European Qualifications Framework for Lifelong Learning – ‘EQF for LLL’), the European Qualifications Framework for Higher Education;
- Bachelor – corresponds to level 6 of the National Qualifications Framework (NQF), the European Qualifications Framework for Lifelong Learning (The European Qualifications Framework for lifelong learning – ‘EQF for LLL’), Box Qualifications of the European Higher Education Area (The Framework of Qualifications for the European Higher Education Area – ‘QF for the EHEA’);
- Master – corresponds to level 7 of the National Qualifications Framework (NQF), the European Qualifications Framework for Lifelong Learning (The European Qualifications Framework for Lifelong Learning – ‘EQF for LLL’), Box Qualifications of the European Higher Education Area (The Framework of Qualifications for the European Higher Education Area – ‘QF for the EHEA’).

According to Article 49 of the current Law of Ukraine ‘On Higher Education’, the forms of training at higher education are full-time (day, evening) and part-time (distance) (ibid.).

State standards for higher pedagogical education, including standards for VET teacher training, are currently under development. The MES recently formed a scientific advisory board and scientific-methodological commission to develop new standards for higher education on the

basis of the competency approach. The general framework of standards is defined by the Law of Ukraine 'On Higher Education' ('On Higher Education' Act, 2014). Article 10 of the law states (ibid.):

- 1) Higher education – a set of requirements for the content and outcomes of educational activities of higher education and research institutions at each level of higher education within each specialty.
- 2) Standards of higher education are developed within each specialty according to the National Qualifications Framework and are used for determining and evaluating the quality of educational content and outcomes of higher education (research institutions).
- 3) A Standard of Higher Education defines the following requirements for educational programmes:
 - i. the amount of ECTS credits that is necessary for obtaining the relevant degree of higher education;
 - ii. a list of competencies of a graduate;
 - iii. normative content of higher education training graduates, formulated in terms of learning outcomes;
 - iv. certification of candidates;
 - v. requirements for internal quality assurance;
 - vi. the requirements of occupational standards (if any).

The formation of the curriculum needs to take into account the requirements of approved standards of higher education in terms of educational qualification characteristics for the respective speciality and educational qualification level at the current time on the development list. The curriculum for a specific profession determines the list of compulsory courses (a maximum of 75 % of the total ECTS credits). The total amount of elective courses must be at least 25 % of the total ECTS credits.

Among the elective courses in the curriculum, a list of professionally oriented disciplines to select from may be established. At the same time, the regulation of the organization of the educational process determines what proportion of courses should be selected from among the courses related to a specific profession and what proportion of the courses students may select freely from.

The average amount of total training time for courses from different cycles is represented in Table 2.

Table 2: Share of courses of different cycles in the total training time (Order of the MoES of Ukraine of 09.19.2014 N^o1048 'On approval of the MES activities plan for the implementation of the Law of Ukraine dated July 1, 2014 N^o1556-VII' On Higher Education)

The title of the cycle	Time share in training programme		
	Junior specialist	Bachelor	Master
Humanitarian and socioeconomic courses	20±5 %	20±5 %	10+5 %
Mathematics and natural-scientific (fundamental) courses	20±5 %	20±5 %	20+5 %
Professional (general vocational) and practical training	60±10 %	60±10 %	70+10 %
Total training time (ECTS credits)	180–240	180–240	90–120

The professional development of teachers is provided by the system of postgraduate education (SPE), covering HEIs 'University of Education Management' of NAES of Ukraine, 27 regional postgraduate educational institutions, and other relevant university departments.

The system of postgraduate education is established with forms of students' coursework with VET school teachers:

- full-time training of first cycle for newly appointed teachers
- full-time training of second and third cycle – for teachers with different work experience
- study on modular system
- part-time form of training
- individual counselling by teachers at the department and methodologists from the centre during the training course
- individual (distance) system of teacher training
- specialized courses to prepare teachers to use new training technologies.

According to Article 46 of the current Law of Ukraine 'On Vocational Education' (Verkhovna Rada, 1998, amended in 2008, 2012, 2013) the training of VET school teachers is provided at higher educational institutions and their specialized departments as well as at industrial and educational colleges and engineering-pedagogical universities.

Junior specialists and bachelors are trained at the industrial-pedagogical technical schools and colleges, particularly at Anton Makarenko Kyiv Industrial Pedagogical College, Donetsk Industrial Pedagogical College, Rubezhansky Industrial Pedagogical College, and Kharkov Industrial Pedagogical College. The basic institution for VET teacher training at the level of junior specialist is Anton Makarenko Kyiv Industrial Pedagogical College.

Training of VET teachers at higher educational institutions in Ukraine is based on:

- specialized engineering and educational institutions (Ukrainian Engineering and Pedagogical Academy in Kharkiv, Crimean Engineering and Pedagogical University)
- Polytechnic HEIs (Vinnitsa Polytechnic University)
- pedagogical HEIs (Berdyansk State Pedagogical University, Kotsiubynskyi Vinnitsa State Pedagogical University, G. Skovoroda Pereyaslav-Khmelnytsky Pedagogical University, Gnatyuk Ternopil National Pedagogical University, Tychina Uman State Pedagogical University)
- academic universities (University of Luhansk, Khmelnytsky State University, Kherson State University)
- specialized institutions (Kyiv National Economic University, Kyiv National University of Technology and Design, Poltava Agricultural University, Uman State Agrarian University).

Educational standards in this field are continuously verified by the basic engineering-pedagogical university Ukrainian Engineering and Pedagogical Academy, which is the training centre for future VET teacher training. According the decision of the International Organization for Engineering Education (IGIP) on 12 September 2000 in Paris, this university is accredited as an educational institution that conforms to the European model of training engineering teachers.

The data for the 2015–2016 state statistics on the number of students who studied in the field ‘Professional education’ (with specializations) are presented in Table 3.

Table 3: The number of students in the field ‘Professional education’ (with specializations) (Ministry of Education and Sciences of Ukraine, 2018a, p. 7)

Education-qualification level	Quantity of students	% of total students – future teachers
“Junior specialist”	254	4.76
“Bachelor”	98	24.44
“Master” (specialists and masters)	1558	12.71

4.3 Training of VET teachers on Economics in Ukraine

Economics teaching in the block of general subjects at VET schools includes the course ‘Principles of Economics’, which encompasses 35 hours (1 hour per week). Other economic subjects are offered in elective courses. Due to the limited amount of hours of economics courses, they are often taught by teachers with no relevant economics education. However, this amount of hours is clearly insufficient, because vocational students need to be prepared to conduct economic activities at businesses.

The field of study ‘Professional Education. Economy’ is provided in Ukrainian HEIs via a binary bachelor’s programme that provides the dual qualification ‘VET teacher’ and ‘Expert in economics’ (or more specific economic specialization). Initial positions that a graduate of the bachelor’s programme in this field is qualified for include teacher of training institutions at levels of accreditation I–II, curator, educator, mentor of extracurricular activities, educator at vocational school, instructor of industrial training, master of education, master of training centre, teacher-trainee, engineer mentor, leader of industrial practices, training laboratory manager, designer, economist, marketing manager on purchases, sales manager, logistic, and so on.

Despite the great need for such training, it is still extremely limited in Ukraine. In recent years it has been widely carried out in the Eastern part of Ukraine: at the University of Luhansk (licenced since 2013 in the amount of 25 full-time and 25 part-time students), Ukrainian Engineering and Pedagogical Academy in Kharkov (licenced from 2013 in the amount of 60 full-time and 80 part-time students), and other uni-

versities. In Kyiv and the Kyiv region, the field 'Professional Education. Economy' is available only at the Kyiv National Economic University (licensed amount: 50 full-time students), G. Skovoroda Pereyaslav-Khmelnitsky State Pedagogical University (licensed amount 40 full-time and 25 part-time students), and Anton Makarenko Kyiv Industrial-Pedagogical College (licensed amount: 20 full-time and 20 part-time students).

4.4 Current issues and prospective of modernization of VET teacher training

Future VET teacher training in Ukraine faces the following problems: the lack of a clear description of VET teacher training, the external nature of the existing standards of VET teacher training, the lack of a holistic concept of VET teacher training in economics, including a binary concept of training that combines economic and educational specialization, the low prestige of the VET teacher profession in society.

Vocational education in Ukraine has always needed practical orientation. While studying at vocational schools, future skilled workers are supposed learn a profession and gain sufficient professional qualifications. However, the training of VET teachers still involves the use of theoretical approaches. In February and March 2017, the Institute of Vocational Education and Training of the National Academy of Educational Sciences in Ukraine conducted a survey among teaching staff of VET schools to find out the ideas of VET school teachers on practice-oriented training for future VET teachers. The survey was carried out remotely via the web service Google Forms, which allowed the institute to distribute a digital version of the questionnaire, process the results, and copy the answers for further processing in special statistical programmes, including SPSS. The questionnaire included 28 questions, combined in 6 units:

- 1) SWOT analysis of VET teacher training in HEIs
- 2) Conditions for practice-oriented training in HEIs
- 3) The current state of technology use in practice-oriented training
- 4) The pursuit of professional self-development in practice-oriented teaching
- 5) Competency of teachers in practice-oriented teaching
- 6) Social and educational characteristics of respondents.

The questionnaire was conducted anonymously to ensure more objectivity. To clarify the rules of the survey, the participants were offered a guide. The questionnaire included both open and closed questions as well as questions combining an open and closed format (in closed questions, respondents were also asked to elaborate on their response if desired).

The survey involved the participation of 869 VET teachers from all regions of Ukraine. Most respondents were females (73 %), which in general reflects the gender structure of the teaching staff at VET schools. In terms of education, the vast majority of respondents (82 %) had higher education qualifications (specialist, master), and 64.9 % had vocational education qualifications. The age structure was the following: up to 30 years – 18.2 %, from 31 to 40 years – 29.5 %, from 41 to 50 years – 24.1 %, more than 51 years – 28.3 %. Work experience was distributed as follows: up to 5 years – 21.9 %, 6–10 years – 18.6 %, 11–20 years – 29.6 %, more than 20 years – 29.9 %. The respondents worked at the following types of vocational schools: professional high schools – 43.2 %, vocational schools – 20.5 %, higher professional schools – 25.9 %, centres of vocational education – 9.3 %. The working positions of the respondents were divided as follows: 37.7 % – teachers of vocational education; 39.5 % – masters of industrial training; 5.3 % – managerial staff (directors, deputy directors); 12.2 % of the respondents (106 people) taught courses on the economic cycle.

Overall, the survey revealed imperfections in the existing system of VET teacher training at HEIs. Despite the fact that this training is characterized by breadth, a fundamental nature, scientific content, and prestige, it is too theoretical, far removed from practice, and not professionally directed; there are also outdated approaches and equipment. Suggestions for improving VET teacher training included increasing the amount of practical training, using modern practice-oriented learning technologies with ICT support, increasing cooperation with enterprises and institutions of professional education, and modernizing logistics. The respondents also referred to the importance of increasing the competency of VET teaching staff and doing more to motivate students to enter the teaching profession.

The organization of teacher training should be changed to reduce the share of traditional forms and methods of work aimed at the elaboration of theory and increase the share of practice in various ways using mod-

ern, practice-oriented teaching methods (training courses, projects, case studies, business simulations, etc.). The learning process should include a substantial amount of practical training. It is recommended to increase the amount of practical training in professional disciplines, to implement teacher training at VET schools, to initiate collaboration between universities that train VET teachers and VET schools as well as educational and production (training) centres at enterprises to provide a better organization of practices, including production, at the workplace, with the aim of equipping future teachers with the necessary skills for using practice-oriented educational technologies (quests, workshops, projects, business and educational games, etc.), ICT (specialized online courses, webinars, e-learning), creating the appropriate legal, socioeconomic, logistical, and financial conditions for practical training, and preparing methodological support for practical training by engaging practitioners to participate in the training process.

5 Conclusion

According to strategic initiatives the role of VET in Ukraine at the present historical stage is to foster capacity building of the national economy, social inclusion, and sustainable development of the economy, giving a professional qualification to young people in order to support their employability. It is being transformed to become a driver of growth and development in Ukraine to be aligned with the strategies and plans for development on national and local levels, with strong linkages with the market and economic reality. The main directions of modernization of VET are prestigious and inclusive VET, quality-based initial VET, career-oriented VET, flexible training pathways and a variety of educational subsystems, compliance with European educational systems with transparent qualifications systems and support for VET students' and teachers' international mobility, high-quality information support, sustainable management and quality assurance. In this case highly qualified and motivated VET teachers are in great demand. Future VET teacher training in Ukraine faces the following problems: the lack of a clear description of VET teacher training, the external nature of the existing standards of VET teacher training, the lack of a holistic concept of VET

teacher training in economics, including a binary concept of training that combines economic and educational specialization, the low prestige of the VET teacher profession in society. The process of modernization of VET teacher training should be in increasing the amount of practical training, using modern practice-oriented learning technologies with ICT support, increasing cooperation with enterprises and institutions of professional education, and modernizing logistics.

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Implementation of Practice-oriented Education and Training

The Case of Vocational Teacher Education
at Kyiv National Economic University
named after Vadym Hetman

1 The initial state and features of education and training for vocational education and training teachers at KNEU

Kyiv National Economic University named after Vadym Hetman (referred to hereinafter as KNEU), introduced psychological and pedagogical education and training in July 1993. It was then that the Department of Pedagogy and Psychology was created by the decision of the university's Academic Council, in consultation with the Ministry of Education of Ukraine (Letter No. 81–5/631 as of June 23, 1993) (Ministry of Education of Ukraine, 1993). At that time it was the first department of psychology and pedagogy at a branch university of Ukraine. The founder and the first head of the department was Doctor of Pedagogical Sciences Professor V. Kozakov.

The basis of psychological and pedagogical education and training at the department was the scientific work of V. Kozakov, including the theory of the organization of independent work of students and its information and methodological support (Kozakov, 1990), the concept of psychological and pedagogical education and training of specialists at non-pedagogical universities (Kozakov, 2003), and the author's discipline 'Psychology of Activity and Educational Management' (Kozakov, 1999).

Several models of psychological and pedagogical education and training have been tested since the establishment of the department at the university.

First, the teaching of basic psychological and pedagogical courses ('Psychology', 'Psychology and Pedagogy', 'University Education', etc.) was implemented as part of the fundamental education and training of

students of economic specialities. In Ukraine, the bachelor's program provides 4 years of basic education and training in the chosen field of knowledge. During his studies, the student acquires basic information from other scientific fields, mainly of a general educational nature. The programs of the bachelor's degree are broad-based, have a general-scientific and general-professional character. In the study plan, disciplines are divided into normative disciplines (disciplines of humanities, disciplines of the cycle of fundamental and general economic training, disciplines of professional and practical training) and optional academic disciplines. Consequently, the above-mentioned disciplines are compulsory in the education and training of students of economic specialities.

Second, a package of disciplines involving in-depth psychological and pedagogical education and training was implemented to obtain a second specialty 'teacher of economics'. The optional component of the study plan is based on the grouping of disciplines that have similar goals (obtaining relevant knowledge, development of abilities and skills from a separate branch) and content. It is focused on the development of one competence: either entrepreneurial (Package No. 1) or managerial (Package No. 2). Package No. 1 includes the disciplines of the certification programme 'Business Modelling', in Package No. 2 – the discipline of the certification programme 'Personnel Management'. The choice of one of the packages of optional disciplines allows the student to obtain a certificate of receiving certain competencies.

After studying the normative discipline 'Psychology and Pedagogy', students had the right to choose as an optional component of the 'Package of disciplines of the psychological and pedagogical cycle'. That package consisted of the following disciplines: 'Psychology of activity and educational management' (4 ECTS), 'Communication process in teaching' (4 ECTS), 'Methodology of teaching economics' (4 ECTS), the term paper 'Methods of teaching economics' (4 ECTS), educational practice in general educational institutions (4 ECTS) and the 'State exam on disciplines of the psychological and pedagogical cycle'. Studying the disciplines of the psychological and pedagogical cycle, writing the research term paper, passing educational practice and successfully passing the state exam allowed the students to obtain the additional speciality 'teacher of economics'. This education and training was initially mandatory for all students of KNEU; later it became optional.

Although the experience of offering psychological and pedagogical education and training along with economics education and training was positive, the quality of the education and training was inadequate due to deficiencies and selective character, and it did not meet the needs of the economy with regard to educating teachers of economics.

In this regard, in 2013 KNEU started education and training of bachelors in the speciality 'Vocational Education (Economics)'. The Department of Pedagogy and Psychology was chosen as the department from which students were to graduate.

Education and training of bachelor's students in the speciality 'Vocational Education (Economics)' is an integral part of the system of education and training of teachers of higher economic educational institutions. According to this system, the first degree is the bachelor (vocational and pedagogical education and training of teachers of educational institutions at accreditation levels I–II), the second is the master's degree (education and training for teaching at higher educational institutions at accreditation levels III–IV), and the third degree is improvement of pedagogical qualification.

Education and training in the speciality 'Vocational Education (Economics)' allows graduates to gain a number of competitive advantages. In particular, they are able to work effectively in the field of economics, in particular in areas connected with social and psychological activity, personnel training, qualification improvement, training work as well as realize pedagogical abilities in the field of vocational economics education, in particular at vocational schools, at postgraduate educational institutions, and in business education, as well as to participate in various educational projects, engage in consulting activities, etc.

Becoming a highly qualified teacher of economics demands knowledge and skills not only in the field of economics but also in the fields of pedagogy, didactics of vocational education, methods of professional training, etc. The education and training of economics teachers therefore requires the implementation of various forms and methods of teaching as well as innovative psychological, pedagogical, didactic, and information technologies.

In addition, the competence students acquire in the field of pedagogy and didactics can be successfully implemented in the field of economic activity, as it enables economists to effectively carry out their professional

activities, manage themselves and their subordinates, organize adaptation of newly arrived workers, work in teams, engage in self-education, train employees, communicate competently with other people, etc.

Thus, training in the speciality 'Vocational Education (Economics)' promotes the professional development of specialists, allows them to gain competitive advantages, and expands their employment opportunities. At the same time, the careful analysis of the implementation of this education and training has made it possible to identify certain disadvantages of traditional domestic vocational education and training, in particular content and training technologies with little relevance for the actual needs of employers and poor implementation of the competence approach, in particular of practical training.

2 Results of an employers' survey on key competencies of vocational education and training teachers

In order to determine the professional and soft skills of colleges' graduates (specialists) from the employers' point of view, KNEU conducted a sociological survey (in the form of a questionnaire) in cooperation with the representatives of the Institute of Professional Qualifications in March – April 2017.

The main aim of the study was to determine the professional and soft skills of colleges' graduates (specialists) from the employers' point of view, to identify the needs of enterprises with regard to such skills, and to identify possibilities for ensuring the quality of specialized education and training by improving VET teachers' education and training. The target group of the survey were Ukrainian financial and insurance companies, because the majority of graduates of the speciality 'Vocational Education (Economics)', who chooses teaching activity, later works in colleges of economic directions. And a great part of these colleges' graduates work in finance and insurance companies. The study had the following objectives:

- to assess the quality of education and training for colleges' graduates (specialists);
- to determine the level of professional skills and soft skills that employers expect colleges' graduates (specialists) to possess and to compile a list of these skills;

- to determine what professional skills and soft skills colleges' graduates (specialists) lack;
- to determine the correlation between the quality of the education and training of colleges' graduates (specialists) and the quality of the education and training of VET teachers;
- to identify possibilities for improving the training of colleges' graduates (specialists) as well as VET teachers in order to adapt it to the needs of the labour market and employer demands.

The results of the statistical analysis indicate low average statistical indicators (arithmetic average, median, and mode) of the respondents' assessment of education and training quality of colleges' graduates (table 1).

Table 1: Statistical indicators of the respondents' assessment of education and training quality of university graduates (Calculated by the authors)

Statistical indicators	Value
Arithmetic	52.8
Median	50
Mode ¹	60
Interval	70
Minimum	20
Maximum ²	90

In order to provide grounds for improving the education and training system, in particular for VET teachers, it is necessary to determine what professional skills and soft skills employers believe should be mastered by colleges' graduates (specialists).

According to the results of the survey, the overwhelming majority (92%) of managers believe that the education and training system should provide a higher than average level of professional skills development.

The most important professional skills the respondents believe colleges' graduates (specialists) should possess are the following (in order of decreasing significance):

¹ The *mode* is a *statistical* term that refers to the most frequently occurring number found in a set of numbers. The *mode* is found by collecting and organizing data in order to count the frequency of each result. The result with the highest number of occurrences is the *mode* of the set (Investopedia, 2018).

² =maximum value that respondents stated.

- 1) Ability to find, systematize, and analyse information
- 2) Ability to organize certain types of work (depending on the scope of professional activity)
- 3) Ability to work in a team
- 4) Ability to plan work
- 5) Ability to make one's own decisions
- 6) Ability to use information technologies
- 7) Ability to clearly formulate one's thoughts
- 8) Time management skills
- 9) Ability to adapt quickly to changes
- 10) Ability to establish contact and readiness for dialogue.

The list of professional skills that colleges' graduates (specialists) lack according to the respondents turned out to be somewhat different. Respondents were able to choose from a proposed list of skills. However, they were also given the opportunity to give free answers. The list contains the following skills:

- Ability to formulate one's thoughts clearly
- Time management skills
- Ability to plan work
- Ability to make one's own decisions
- Ability to listen
- Ability to find, systematize, and analyse information.

Thus, the relevant educational programmes and curricula for the training of specialists should include academic disciplines, workshops, and training courses focused on the formation of the professional skills listed above.

With regard to the question of the development level of soft skills necessary for colleges' graduates (specialists), 48% of the respondents chose a good level, 28% a high level, and 24% an average level. None of respondents stated that graduates should achieve a low development level of soft skills.

According to the respondents, the most important soft skills that colleges' graduates have to possess (in order of decreasing significance) are the following:

- 1) Responsibility
- 2) Result orientedness

- 3) Desire for learning and development
- 4) Diligence
- 5) Purposefulness (striving to achieve set goals)
- 6) Proactiveness
- 7) Analytical abilities
- 8) Communication abilities
- 9) Organizational abilities
- 10) Creativity

The list of soft skills that graduates from colleges (specialists) lack includes the following:

- Responsibility
- Stress resistance
- Communication abilities
- Self-discipline and strictness to others
- Honesty and fairness
- Result-orientedness

The majority of respondents (74 %) believe that insufficient development of professional skills and soft skills is due to insufficient quality of education and training of specialists. According to the results of the survey, 38 % of the respondents indicated that there was a interrelation between the quality of the education and training of specialists and the quality of the education and training of VET teachers. None of the respondents denied the existence of such a link.

To some extent, the results of the survey confirmed the assumption that the education and training of colleges' graduates (specialists) can be improved particularly through the improvement of VET teachers' education and training. Consequently, the education and training of VET teachers in the necessary competencies (in accordance with the needs of the labour market and the demands of employers) as well as educational technologies should help to improve the quality of the education and training of specialists.

The results of the study suggest that VET teachers should understand the significance of such important components of competencies as professional skills and soft skills for the successful work of future specialists and the field of their practical use and that they should also possess

appropriate educational technologies for forming and developing these skills in students.

A means of addressing the first task is to require students (future VET teachers) to complete an on-the-job internship. Only with the experience of such an internship can future VET teachers understand the real business needs for these competencies and the specific features of certain activities.

In order to implement the results of the study, KNEU made changes to the study plan of the speciality 'Vocational Education (Economics)'. The duration of pedagogical practice was increased and new disciplines were implemented in the form of practical and training courses as a means of addressing the second task for the education and training of students of the speciality 'Vocational Education (Economics)'.

3 Improvement of the study plan for education and training of bachelor's students in the speciality 'Vocational Education (Economics)' in the direction to enhance its practical orientation

In a comparative analysis of the study plans (identification and comparison of essential structural components) for education and training of teachers of economics for the system of vocational education in higher education institutions of Ukraine and abroad in the framework of the E+ ITE-VET project, we identified the following features of vocational education and training of bachelors of the speciality 'Vocational Education (Economics)' in Ukraine (IVET NAPS, 2017):

- dual qualification (teacher of vocational education and training and specialist in economics)
- multi- and cross-disciplinarity
- prevailing normative disciplines of the cycle of professional and practical education and training, economic disciplines
- compliance with the standard for the basic component of education and training.

The study plans of educational institutions differ in the content and quantity of training, in the amount of disciplines, the distribution of the

normative and selective parts of the programme, etc. At foreign educational institutions, the education and training of bachelor's students in the field of 'Economics Education' is shorter than the corresponding programme in Ukraine and includes a smaller list of disciplines. Study plans have a simpler structure, contain a list of only basic normative disciplines, and differ in the practical orientation of the content of education and training (humanitarian training is considered as the elective component), in the duration of teaching practice and internships, as well as in the preparation of the bachelor's thesis. The extent of the practical component of education and training of teachers of vocational education and training in Ukraine is much smaller than abroad.

The study plan of the bachelor's programme in vocational education and training in the speciality 'Vocational Education (Economics)' at KNEU included similar features: multi- and cross-disciplinarity, a predominance of economic disciplines, excessive theory, little practical training, and a lack of flexibility and variability.

The study plan was improved with the objective of enhancing the practical orientation of the education and training of teachers of vocational education and training at KNEU.

First of all, the interrelation between disciplines of economic and pedagogical orientation was changed (Table 2). The previous study plan is the plan according to which teachers of economics at KNEU were trained before the start of the project ITE-VET (2015–2019 academic years). The new study plan is the plan that was prepared during the project ITE-VET implementation (2017–2021 academic years).

Table 2: Comparison of economic and pedagogical components of study plans
(Calculated by the authors)

Types of disciplines	Previous study plan				New study plan			
	Amount		ECTS		Amount		ECTS	
	units	%	units	%	units	%	units	%
Disciplines of pedagogical orientation	26	35	114	48	28	33	124	52
Disciplines of economic orientation	31	42	136	57	29	34	113	47

Prior to the start of the ITE-VET project, 31 disciplines of economic orientation (42 % of the total number of disciplines) and 26 disciplines of pedagogical orientation (35 %) were presented in the study plan. In the new study plan, the number of economic and pedagogical disciplines is equal: 29 disciplines of economic orientation (34 %) and 28 disciplines of pedagogical orientation (33 %). By the amount of credits, the proportion of disciplines of economic orientation was reduced (from 57 % to 47 %) and the proportion of disciplines of pedagogical orientation was increased (from 48 % to 52 %).³ Thus, the economic and pedagogical components of the study plan were balanced out.

Significant changes were made to the practical component of the bachelor's programme in vocational education and training. The amount of practical training increased due to an increase in the number of ECTS credits from 12 to 23 (Table 3).

Practical training was built up on the basis of a cross-cutting programme, which is a comprehensive implementation of the acquired professional competencies in conditions of real economic and pedagogical activity. Practical training includes Speciality Introductory Course (training course) (3 ECTS), Educational Practice (4 ECTS), Internship (6 ECTS), Teaching Practice (6 ECTS), and Preparation and Defence of Bachelor's Thesis (4 ECTS).

Table 3: Comparison of practical training before and after the project (Calculated by the authors)

Previous study plan		New study plan	
Content of practical training	ECTS	Content of practical training	ECTS
University Education	0	Speciality Introductory Course (training course)	3
Teaching Practice	6	Educational Practice	4
Internship	6	Internship	6
		Teaching Practice	6
		Preparation and Defence of Bachelor Thesis	4
Total	12		23

³ The total amount of disciplines in percentage terms is more than 100% due to the consideration of all disciplines belonging to the selective component.

At the beginning of practical training, students take the *Speciality Introductory Course (training course)*, aimed at giving them a general idea of the structure, content, character, and specific features of their future professional and pedagogical activities. This training course is part of the structure of practical training and is its initial (propaedeutic) stage. It is aimed at forming a general idea of the structure, content, character and specificity of future vocational and pedagogical activities, involves study tours to educational institutions, the invitation of practicing teachers, etc. The structure of practical training in the new study plan is presented in Table 4.

Table 4: The structure of practical training (Calculated by the authors)

Types of practice	Semester	Duration, weeks	ECTS	Hours
Educational Practice (at vocational schools/colleges)	6	2	4	120
Internship (at companies)	7	4	6	180
Teaching Practice (at vocational schools/colleges)	8	4	6	180
Total	–	10	16	480

Educational Practice is aimed at familiarizing students with the peculiarities and specific conditions of pedagogical activity at educational institutions, developing their skills in the critical analysis of the organization of the educational process at educational institutions, and instructing them in the content, forms, methods, and means of teaching activities.

Internship promotes the consolidation and deepening of knowledge about the functioning of economic enterprises, enabling students to familiarize themselves with the duties of economists, gain practical experience in economic activity, and learn to identify the needs of economics training among students at educational institutions.

Teaching Practice allows students to learn how to implement methodological development of a learning subject, to take into account the psychological characteristics of students, and to acquire practical teaching skills.

As a means of strengthening the practical orientation of the training, the complex state exam on disciplines of pedagogical and economic orientation was also replaced with Preparation and Defence of

the Bachelor Thesis. This is an independent research thesis written by VET students at the final stage of their education and training. Its aim is to establish that the student has acquired academic knowledge and practical competencies corresponding to the standards of higher education. It involves solving specific theoretical and practical problems with the use of acquired knowledge and skills, in matters of psychological and pedagogical as well as professional (economic) education and training.

As a means of strengthening the didactic component of the study plan, 13 practice-oriented training courses (training courses and practicums) allowing vocational education and training teachers to acquire key competencies were developed according to the results of the employers' survey on key competencies of vocational education and training teachers mentioned above:

- Speciality Introductory Course (training course) (3 ECTS)
- Practicum 'Self-Management' (4 ECTS)
- Practicum 'Educational Management' (3 ECTS)
- Training course 'Management of Social-Psychological Processes in Professional Activity' (4 ECTS)
- Practicum 'Innovative Technologies in Education' (3 ECTS)
- Practicum 'Teaching Techniques of General Economic Disciplines' (4 ECTS)
- Practicum 'Teaching Techniques of Professional Disciplines' (4 ECTS)
- Practicum 'Information Technologies in Education and TMT' (4 ECTS)
- Training course 'Proficiency of Decision Making' (4 ECTS)
- Training course 'Principles of Self-control' (4 ECTS)
- Training course 'Formation of Self-Education Skills' (4 ECTS)
- Training course 'Forming Managerial Competence' (4 ECTS)
- Training course 'Economic Thinking Development' (4 ECTS).

As a means of enhancing the practical orientation of teaching in the structure of disciplines of pedagogical orientation, the number of didactic disciplines was increased (Table 5).

In the previous study plan the number of didactic disciplines was 30 % of the total amount of psychological and pedagogical disciplines, and in the new study plan their proportion is 47 %.

Table 5: Comparison of study plans (Calculated by the authors)

Components of study plan	Previous study plan				New study plan			
	Amount		ECTS		Amount		ECTS	
	units	%	units	%	units	%	units	%
Pedagogical disciplines	14	52	57	50	9	28	33	27
Didactic disciplines	8	30	34	30	15	47	57	46
Psychological and pedagogical disciplines	3	11	11	10	3	9	11	9
Practice	2	7	12	10	5	16	23	18
Total	27	100	114	100	32	100	124	100

Regarding the disciplines of the psychological and pedagogical cycle, the proportion of practical classes was also increased from 23 % to 32 % (Table 6).

Table 6: Data on changing the proportion of practical classes in the new study plan compared with the previous one (Calculated by the authors)

Blocks of educational disciplines	Proportion of practical classes in total amount of hours	
	Previous study plan	New study plan
Pedagogical disciplines	24%	27%
Didactic disciplines	21%	36%
Psychological and pedagogical disciplines	28%	28%
Total	23%	32%

In lectures and practical classes, the use of active and interactive teaching methods, including discussions, educational games, cases, methods of generating creative ideas, etc., was increased.

As a means of deepening the professional economics training of students, two packages of selective disciplines were introduced:

Package No. 1. Disciplines of the Certification Programme 'Business Modelling':

- Entrepreneurship and Business Culture (4 ECTS)
- Leadership and Partnership in Business (4 ECTS)

- Training Course ‘Creation of One’s Own Business’ (4 ECTS)
- Training Course ‘Business Modelling’ (4 ECTS)
- Capital of Enterprise: Formation and Use (4 ECTS)
- Training Course ‘Start-Ups’ (4 ECTS).

Package No. 2. Disciplines of the Certification Programme ‘Personnel Management’

- Training Course ‘Team Management’ (4 ECTS)
- Recruitment of Personnel (4 ECTS)
- Personnel Assessment (4 ECTS)
- Management of Personnel Behavior (4 ECTS)
- Personnel Development (4 ECTS)
- Training and Coaching in Personnel Management (4 ECTS).

The package approach to the formation of an elective component of the study plan implemented in the study plan of the bachelor’s programme in vocational education and training in the speciality ‘Vocational Education (Economics)’ is being widely used in the development of the new study plan for the education and training of bachelor’s students of various specializations in KNEU for the 2018–2019 academic year. The package approach to the formation of an optional component of the study plan is grouping of training courses of similar content and objectives in certain groups (packages). That is, students choose not separate optional disciplines for studying, but packages of grouped disciplines. Some packages of optional disciplines allow students to obtain a certificate of receiving certain competencies.

Thus, implementation of the international Erasmus Plus project ‘Improving teacher education for applied learning in the field of VET (ITE-VET)’ (2016–2018; № 574124-EPP-1-2016-1-DE-EPPKA2-CBHE-JP) allowed us to modernize the study plan for the vocational education and training degree programme at KNEU by strengthening its practical orientation. In particular, the following changes were made: economic and pedagogical components of education and training were balanced out; practical education and training was increased and a cross-cutting practical programme was developed; the didactic component of the study plan was intensified through the introduction of practicums and training courses; the number of didactic disciplines and the proportion of practical courses in the disciplines of pedagogical direction were increased; use

of active and interactive teaching methods was increased; the content of selective economic disciplines was clarified to strengthen their practical orientation.

4 Rationale for implementing the specialization 'Economic and Business Education'

The economy of Ukraine needs educated and competent managers and specialists of different levels for successful functioning in the conditions of an innovative (new, knowledge) economy. This undoubtedly affects the content of study programmes in the field of economics and business education. Educational institutions need to assess the needs of the economy and business in a timely manner and adapt their approaches to education and training.

Today, there is growing demand for high-quality economics and business education. As a result, economics and business education is one of the sectors of the educational industry with the most dynamic development in Ukraine.

The development of business education is taking two directions:

- 1) MBA programmes, which are of long duration and are implemented by business schools in accordance with Western standards
- 2) short-term courses and training programmes aimed at satisfying actual business needs.

KNEU, as the leading institution of higher economics education in Ukraine, is responding rapidly to the changes taking place in the business environment. In 2017, the decision was made to introduce training for a new specialization, 'Economics and Business Education', within the speciality 'Vocational Education'. The main arguments in favor of such a solution are:

- 1) an increase in the demand for specialists in the field of business education, which is related to the need for lifelong learning and the development of corporate learning and training centres in this regard
- 2) an increase in the competitiveness of graduates of the specialization 'Economics and Business Education' on the labour market through the expansion of employment opportunities

- 3) an increase in the attractiveness of the new specialization among entrants – future consumers of educational services.

The appropriateness of introducing education and training for a new specialty is confirmed by an analysis of the training of specialists at foreign higher education institutions in related fields, in particular at the University of Konstanz (Germany) (UKON, 2018), the Vienna University of Economics and Business (Austria) (WU, 2018), and the Technical University of Dresden (Germany) (TUD, 2018).

For example, a bachelor's degree in business and economics education earned at the Technical University of Dresden opens up opportunities for a career in commercial education, educational counselling, and adult education and at business/administration departments. Education and training at this university has an interdisciplinary character and involves the formation of competencies in business and economics, education, and psychology. In addition to receiving teacher education and training, students gain economics qualifications. The economics component includes modules for business management, economics, business informatics, law, mathematics, and statistics. The pedagogical component contains the basics of psychology of education, business didactics, and the basics of commercial education.

The purpose of education and training of bachelor's students in the specialization 'Economic and Business Education' at KNEU is to form specialists of a 'new type', professional and socially mobile employees who have deep knowledge and practical skills in the field of economics, are capable of self-improvement and professional creativity, and are ready to work in market conditions.

Graduates are qualified for employment in the following areas:

- 1) at institutions of vocational education as teachers of economics, for which this type of education and training was initiated primarily at the state level
- 2) at corporate universities, training centres, and departments of personnel development of enterprises as specialists in personnel development
- 3) at training companies as business trainers
- 4) at institutions of vocational education as administrators and methodologists for organizing the learning process, etc.

In order to determine the competencies of future specialists, we analysed employers' inquiries in the field of education and training (Work.UA, 2018; HeadHunter.Ua, 2018), in particular:

- 1) requests from companies with corporate universities and training centres to recruitment agencies for recruiting personnel development specialists
- 2) company requests to independent training and learning centres to provide various educational services.

We examined 59 requests posted on the internet pages of the recruitment agencies (Work.UA, 2018; HeadHunter.Ua, 2018) with help of the content analysis method as a quantitative and qualitative study of textual information in order to determine the requirements for the professional competencies of specialists in the field of economic and business education:

- develop and implement study programmes
- develop and implement learning projects and projects of professional certification
- develop the methodology of a study process as a kind of combination of different methods, strategies, principles, methods of organizing educational activities in accordance with the goal set
- organize a study process
- develop internship programmes for employees
- conduct regular monitoring of the professional knowledge level of employees
- develop and conduct classroom and field training
- identify needs in personnel training.

At the same time, we analysed business requests regarding the requirements for individual and personal qualities of specialists in the field of economics and business education. According to the results of the analysis, a modern specialist in business education should meet the following requirements (by degree of significance):

- ability to think systematically
- ability to express an opinion clearly
- ability to respond quickly to changes
- ability to make decisions on their own

- ability to analyse and synthesize information
- high level of motivation
- initiative
- energetic nature
- creative approach to work
- ability to work in teams.

The requirements of customers of educational and training services for the organization of the study process and teachers and trainers included the following:

- practical orientation of training
- individualization of training
- business simulation, in particular the solving of real practical problems
- high competence of teachers and business trainers
- currency of information
- use of modern teaching methods and technologies.

Thus, the start of education and training for a new specialization in 'Economic and Business Education' within the speciality 'Vocational Education (Economics)' at KNEU requires teachers to tackle new educational tasks and increases the demands on the level of professional education and training of students. Such changes in psychological and pedagogical education and training at the university can be characterized as a transition from the stage of formation to the stage of growth and improvement of the quality of education and training of future teachers.

5 Development of a new study plan for the training of bachelor's students with the specialization 'Economic and Business Education' (speciality 'Vocational Education (Economics)')

The purpose of the educational and professional programme 'Economic and Business Education' is the formation and development of the general and professional competencies in the field of education and economics necessary for educational activities at educational establishments, educational services, and business education centres as

well as for training activities, the sale of educational services, and the effective management of financial and human resources in the field of educational activities. The programme has the following specific features:

- a combination education and training that provides a balance between economics and pedagogical components in the study plan
- practical orientation, which is achieved through the inclusion of training courses, practicums, internships, and pedagogical practice
- use of the package approach in the selective part of the study plan.

The study plan contains normative, selective, and practical components. The normative component includes disciplines of general and professional training. The selective component contains selective disciplines for deepening and expanding one's professional profile. The practical component is represented by different types of practice and preparation for the bachelor's thesis.

The study plan of the educational and professional programme 'Economic and Business Education' is characterized by a consolidation of disciplines (reduction of the amount with a simultaneous increase in credits). The study plan of the educational and professional programme 'Vocational Education (Economics)' included 86 disciplines (with a total of 240 credits); that of the programme 'Economic and Business Education' includes 64 disciplines with the same amount of credits (Table 7).

Table 7: Comparison of the proportions of economic and pedagogical disciplines
(Calculated by the authors)

Components of study plan	Study plan of the programme 'Vocational Education (Economics)'				Study plan of the programme 'Economic and Business Education'			
	Amount		ECTS		Amount		ECTS	
	units	%	units	%	units	%	units	%
Disciplines of pedagogical orientation	28	33	124	52	37	58	135	56
Disciplines of economic orientation	29	34	113	47	13	20	60	25
Total	86	–	240	–	64	–	240	–

Due to the fact that the new study plan contains a number of professionally directed didactic disciplines ('Economic Didactics', 'Economic Psychology', 'Methodology of Conducting Business Training Courses', etc.), it was decided to reduce and integrate disciplines of economic orientation (from 34 % to 20 %). In the study plan of the educational and professional programme 'Economic and Business Education', more than half of the disciplines (58 %) are pedagogical.

Disciplines of pedagogical orientation are divided into pedagogical, didactic, and psychological and pedagogical (Table 8).

As a means of increasing the practical orientation of education and training, the proportion of pedagogical disciplines was decreased (from 28 % to 14 %) and the proportion of didactic disciplines was increased (from 47 % to 51 % in number and from 46 to 62 % with regard to ECTS credits), as was the proportion of psychological-pedagogical disciplines (from 9 % to 24 %). Consequently, the new study plan includes more didactic and psychological and pedagogical disciplines, which provide specializations and applied learning. Didactic and psychological and pedagogical disciplines are of a more applied character, than pedagogical ones, since they are interrelated as specific and general. Pedagogical disciplines are more theoretical, contain methodological issues. Didactic disciplines are devoted to the teaching methods of individual educational

Table 8: Structure of disciplines of pedagogical orientation (Calculated by the authors)

Components of study plan	Study plan of the programme 'Vocational Education (Economics)'				Study plan of the programme 'Economic and Business Education'			
	Amount		ECTS		Amount		ECTS	
	units	%	units	%	units	%	units	%
Pedagogical disciplines	9	28	33	27	5	14	21	16
Didactic disciplines	15	47	57	46	19	51	84	62
Psychological and pedagogical disciplines	3	9	11	9	9	24	35	26
Practice	5	16	23	19	4	11	30	22
Total	32	–	124	–	37	–	135	–

disciplines of economic orientation, include more practical tasks aimed at the formation of practical teaching skills. Psychological and pedagogical disciplines are also more practical-oriented, since they are based on the analysis and play of practical situations, training exercises.

The total amount of practical education and training was increased and its content was revised (Table 9).

Table 9: Content and amount of the practical component of education and training
(Calculated by the authors)

Study plan of the programme 'Vocational Education (Economics)'		Study plan of the programme 'Economic and Business Education'	
Content of practical education and training	ECTS	Content of practical education and training	ECTS
Introductory Course (training course)	3	–	–
Educational Practice	4	Educational Practice	4
Internship	6	Internship	6
Teaching Practice	6	Teaching Practice	10
Preparation and Defence of Bachelor Thesis	4	Preparation and Defence of Bachelor Thesis	10
Total	23	Total	30

Consequently, the total volume of the practical component of the educational-professional programme was increased from 23 to 30 ECTS credits. The discipline 'Introductory Course (training course)' was unified and removed from the content of the practical training component by the decision of the university. At the same time, the amount of ECTS credits for teaching practice was significantly increased in the structure of the practical component, as was for that for the preparation and defence of the bachelor's thesis (Table 10).

In connection with a specification of their specialization, students may also undergo educational and teaching practice at business education centres.

The content of the selective component of the educational and professional programme was reviewed. Three types of selective packages were introduced:

- 1) packages of selective disciplines for deepening a professional profile by speciality

Table 10: The structure of practical training (Calculated by the authors)

Types of practice	Semester	Duration, weeks	ECTS	Hours
Educational Practice (at vocational schools/ colleges/ centres of business education)	6	2	4	120
Internship (at companies)	7	4	6	180
Teaching Practice (at vocational schools/ colleges/ centers of business education)	8	7	10	300
Total	–	13	20	600

- 2) packages for expanding a professional profile from the university-wide catalogue of selective discipline packages
- 3) package ‘Advanced Learning of Foreign Language’.

Students choose one package from the first and second types of packages. Instead of the package ‘Advanced Learning of Foreign Language’, a student can choose an additional package from two previous types.

Packages of selective disciplines for deepening a professional profile by speciality allow for in-depth study of disciplines of pedagogical orientation. The study plan contains three packages:

- 1) *Package ‘Communication and Leadership in Education’ (20 ECTS):*
 - Image Creation (4 ECTS)
 - Pedagogical Rhetoric (4 ECTS)
 - Training Course ‘Leadership and Team Management in Education’ (4 ECTS)
 - Training Course ‘Proficiency of Decision Making in Education’ (4 ECTS)
 - Intercultural Communication in Education (4 ECTS).
- 2) *Package ‘Training and Coaching in Education’ (20 ECTS):*
 - Training Course ‘Targeting and Motivation in Education’ (4 ECTS)
 - Training Course ‘Development of Creativity and Pedagogical Creative Work’ (4 ECTS)
 - Training Course ‘Development of Economic Thinking’ (4 ECTS)

- Training Course ‘Development of Entrepreneurship and Adventurousness’ (4 ECTS)
- Coaching and Mediation in Economics and Business Education (4 ECTS).

3) *Package ‘Self-Education and Research Activity’ (20 ECTS):*

- Training Course ‘Formation of Self-Education Skills’ (4 ECTS)
- Fundamentals of Scientific Pedagogical Research (4 ECTS)
- Training Course ‘Time-Management’ (4 ECTS)
- Training Course ‘Self-Control in Education’ (4 ECTS)
- Education Scientific Studies (4 ECTS).

The packages for expanding the professional profile allow students to study disciplines of another (non-pedagogical) professional orientation selected from the university-wide catalog of selective discipline packages. In the study plan, two packages are presented:

1) *Package ‘Applied Psychology’ (20 ECTS):*

- Psychology of Social Interaction (4 ECTS)
- Practical Psychodiagnostics (4 ECTS)
- Development of Critical Thinking (4 ECTS)
- Negotiation and Mediation Training (4 ECTS)
- Training Course ‘Self-Management’ (management of one’s own life) (4 ECTS).

2) *Package ‘Personnel Management’ (20 ECTS):*

- Conflict Management (4 ECTS)
- Recruitment of Personnel (4 ECTS)
- Personnel Administration (4 ECTS)
- Motivational Management (4 ECTS)
- Career Management (4 ECTS).

Consequently, the development of the educational and professional programme ‘Economic and Business Education’ allowed for a deepening of the practical orientation of education and training of teachers of vocational education and training.

6 Master's Programme Project

Due to the successful implementation of the educational and professional programme 'Economics and Business Education', there are plans to offer a master's programme to allow graduates to continue their education and training in vocational education and training.

At present, holders of a master's degree in the speciality 'Vocational Education (Economics)' in Ukraine are qualified to teach economics and managerial disciplines at educational institutions, manage personnel at enterprises, and work in economic units of budget organizations and industrial enterprises in the positions of economist, manager, accountant, marketing specialist, etc. At the same time, there are hardly any programmes offering this education and training.

A comparison of existing models of master's programmes in Ukraine in the field of vocational education with similar foreign programmes (UKON, 2018; WU, 2018) reveals significant differences. Foreign educational institutions have introduced more flexible, individualized programmes with different learning paths (practical or research) as well as with a larger amount of elective disciplines and practices.

The KNEU has not yet implemented a master's programme for teachers of vocational education and training in the economics specialization. However, the KNEU project team has developed a draft study plan for such a programme and plans to implement it in the 2019–2020 academic year.

The total amount of the disciplines in the study plan is 90 ECTS credits.

The draft study plan for the education and training of masters in the specialization 'Economic and Business Education' (speciality 'Vocational Education (Economics)') consists of three components: normative, selective, and practical.

I. Normative disciplines:

1.1. Cycle of general education and training (15 ECTS)

- Global Economy (5 ECTS)
- Social Responsibility and Business Ethics (5 ECTS)
- Methodology of Scientific Research on Education (5 ECTS).

1.2. Cycle of professional education and training (20 ECTS)

- Didactics of Economics and Business Education (5 ECTS)
- Project Management in Education (5 ECTS)

- Management of Education and Development of Educational Organizations (5 ECTS)
 - Andragogy (5 ECTS).
- II. Selective disciplines (24 ECTS):
- 2.1. Package ‘Didactics of Economics Education’
- Educational Design (4 ECTS)
 - Measurement in Economics Education (4 ECTS)
 - Motivation for Training (4 ECTS)
 - Innovative Technologies in Economics Education (4 ECTS)
 - Development of Economic Thinking (4 ECTS)
 - Socio-Psychological Training Course ‘Interpersonal Relationships in Education’ (4 ECTS).
- 2.2. Package ‘Didactics of Business Education’
- Entrepreneurship in Business Education (4 ECTS)
 - Business Education Technologies (4 ECTS)
 - E-Learning (4 ECTS)
 - Development of Professional Career (4 ECTS)
 - Business Counselling and Coaching (4 ECTS)
 - Socio-Psychological Training Course ‘Leadership and Team Building’ (4 ECTS).
- III. Practical training (31 ECTS):
- Interdisciplinary Training ‘Pedagogical Mastership’ (3 ECTS)
 - Practice (Work Experience Internship, Teaching Practice) (17 ECTS)
 - Preparation and Defence of Master Thesis (10 ECTS).

The cycle of general education and training includes disciplines of economics and research orientation. The cycle of professional education and training includes the disciplines of psychological and pedagogical orientation. The selective components are represented by two blocks of disciplines that reflect two types of professional orientation: economics and business education. The education and training is aimed at the formation of the necessary competencies of master’s level students in the field of education, taking into account their specialty and specialization. Practical training is implemented through an interdisciplinary training course on ‘Pedagogical Mastership’ as well as through various types of practice, preparation, and defence of the master’s thesis.

The draft study plan differs from existing analogues in Ukraine in that it has a greater practical orientation, a greater amount of elective and practical components, more variability, and a focus on the formation of modern professional pedagogical competencies.

7 Conclusions

The research conducted by the project team of Kyiv National Economic University named after Vadym Hetman, in the process of implementing the international Erasmus Plus project 'Improving teacher education for applied learning in the field of VET (ITE-VET)' (2016–2018; № 574124-EPP-1-2016-1-DE-EPPKA2-CBHE-JP) allows the following conclusions.

1. Education and training in speciality 'Vocational Education (Economics)' promotes the professional development of specialists, allows them to gain competitive advantages, and expands their employment opportunities. However, the bachelor's programme in this field implemented at KNEU before the start of the project ITE-VET suffered from traditional disadvantages of domestic vocational education and training, in particular content and training technologies with little relevance for the actual needs of employers and a poor implementation of the competency-based approach. The study plan was characterized by multidisciplinary, a predominance of economics disciplines, excessive theory, little practical training, and a lack of flexibility and variability.
2. The results of the survey (conducted by KNEU in cooperation with the Institute of Professional Qualifications among managers from financial and insurance companies in March – April 2017) confirmed the need for improving the education and training of colleges' graduates (specialists), in particular through the improvement of VET teachers' education and training. On the basis of the research, it was concluded that the VET teachers should understand the significance of professional and soft skills for the successful work of future employees and the field of their practical use, and that they should also possess appropriate educational technologies to form and develop these skills in students.

3. To ensure greater practical orientation of the study plan for the education and training of vocational education teachers, KNEU made a number of changes: the economics and pedagogical components of the study plan were balanced out; the amount of practical training was increased, and a cross-cutting programme of practice was developed; the didactic component of the study plan was intensified through the introduction of practicums and training courses; the number of didactic disciplines and the proportion of practical courses in the disciplines of pedagogical orientation were increased; the use of active and interactive teaching methods was increased; and the content of selective economic disciplines was improved as a means of strengthening their practical orientation.
4. In connection with the increasing demand for specialists in business education and the need to increase the attractiveness of the field among entrants and the competitiveness of graduates on the labour market, the university decided to introduce the new specialization 'Economics and Business Education' within speciality 'Vocational Education'. The expediency of introducing this new specialization is confirmed by an analysis of the education and training of specialists at foreign higher educational institutions in related specializations.
5. The specific features of the programme 'Economic and Business Education' are a combination of education and training that provides balance between the economics and pedagogical components of the study plan, a more practical orientation on account of an increase in the amount of didactic and psychological-pedagogical disciplines, pedagogical practice and internships, training courses, practicums, and the use of the package approach in the selective part of the study plan.
6. In order to provide graduate education and training for teachers of vocational education and training that employs international best practices, the KNEU project team has developed a draft study plan for a master's programme with the specialization 'Economic and Business Education' (speciality 'Vocational Education'), which will be introduced in the 2019–2020 academic year. The draft study plan differs from existing analogues in Ukraine in that it has a more practical orientation, a greater amount of elective and practical components, variability, and a focus on the formation of modern professional pedagogical competencies.

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Improving Vocational Education Teacher Training at Lviv University within the Framework of the Erasmus+ project ITE-VET

1 Teacher education for VET at Lviv University and needs analysis against the background of ITE-VET

Ivan Franko National University of Lviv (IFNUL) is one of the oldest universities in Ukraine, with strong academic traditions and a current mission to be a leading academic institution in Ukraine. Lviv University was founded in 1661 on the historical model of the classical European university developed since the Middle Ages, and the same principle extends to its teaching. In the official documents of the independent Ukraine, in particular in the Resolution of the Cabinet of Ministers of 5 September 1996, 'On Ratification of the Position of the State Higher Educational Institution' (RCM, 1996, p. 1), the classical university is first defined as a multidisciplinary institution of higher education that trains specialists with higher education in a wide range of natural, human, and technical sciences, technology, and culture with educational and professional programmes at all levels. As a classical educational institution, Lviv University is therefore a leading research centre that promotes scientific knowledge, carries out cultural and educational activities among the population, and conducts fundamental and applied research.

The principal aim of Lviv University is to provide high educational and scientific standards and meet the cultural and social needs of individuals, society, and the state in the process of training highly qualified specialists. In accordance with this goal, its activity is formed on the grounds of preserving Ukrainian culture and traditions and developing national consciousness and identity. However, in the context of contemporary educational challenges, Lviv University is responsible for training the highly qualified personnel demanded by society and the state, including specialists of various fields and teaching staff who can work at

educational institutions of different types, in particular at vocational schools and colleges. At the same time, and in line with the history of the classical university, the focus at Lviv University is placed on the theoretical basis of higher education and on the training of high-level scholars.

Lviv University has its own history of teacher education, although the teacher training system at the university has developed gradually. Researchers differentiate between the following stages of development of teacher education at Lviv University: religious-pedagogical (1812–1871); philosophical-pedagogical (1871–1907); attempts to institutionalize teacher training (1907–1921); the foundation of psychological and educational studies (1921–1939).

Nearly 22 faculties at Lviv University provide teacher education for two levels – bachelor's and master's programmes that qualify graduates to work at secondary schools and higher education institutions depending on their educational and qualification level. The recently formed Faculty of Teacher Education (2015) at Lviv University organizes the training for the teaching staff of preschool and elementary education, special and inclusive education, and social workers. The pedagogical component of teacher education at various faculties of the university is provided by the Department of General and Social Pedagogy, which belongs to the Faculty of Teacher Education.

At the 'bachelor' level, teacher education at Lviv University includes training for the following professions:

- specialist in a scientific field and subject area teacher
- preschool teacher
- elementary school teacher
- teacher in the field of special education
- teacher in the field of social pedagogy.

At the level of the master's, graduates can obtain qualifications as a researcher in a field of science, secondary education teacher of a subject area, and a master of preschool and elementary education.

The main basic compulsory courses for training prospective teachers at the bachelor level at the university faculties include:

- Psychology (3 ECTS)
- Methodology and methods of teaching subject areas (3 ECTS)

- Pedagogy (3 ECTS), including general questions of pedagogy, theory of education, and didactics, the theory of education and training.

Each of these disciplines is provided by profile departments, and their content is therefore predominantly theoretical in nature. In addition, the Department of General and Social Pedagogy offers students the following elective courses: Fundamentals of Psychology and Pedagogy; Theory of Education and Training as the Introduction to Teaching; Educational Management; Modern Educational Space; Teaching Mastery and Skills; Pedagogical Conflictology (conflict resolution in educational environments).

The same approach is observed at the master's level. Here students acquire knowledge in higher education pedagogy and relevant skills for teaching not only at secondary schools but also at higher education institutions of different types and profiles. The compulsory courses for teacher training at the master's level are:

- Psychology of Higher Education (3 credits)
- Methodology and Methods of teaching subject areas at higher education institutions (3 credits)
- Psychology and Pedagogy of Higher Education or Pedagogy of Higher Education (chosen by the faculty) (3 credits).

Just as at the bachelor's level, the corresponding profile departments are responsible for obligatory courses of the master's programme. The elective pedagogical courses in this degree programme, which are chosen by the faculty, include Higher Education and the Bologna Process, Modern University Education, Mastery and Skills of a Higher Education Teacher, and Teaching Methods in Higher Education.

The teacher education at various faculties of Lviv University for the bachelor's programme involves teaching practice (4 credits), which takes place after the students have completed the theoretical courses, usually after their professional practical training. The main bases of teaching practice are secondary schools, lyceums, and gymnasiums. They run for one month or less. Master's students receive teaching assistance practice at higher educational institutions of various levels after completing their research practice. The duration of this practice is usually 4 weeks, sometimes 6 weeks, and 8 weeks for teacher training in different specialties, depending on the faculty study plan. The practice of bachelor's and

master's students is supervised by the teaching staff of their home faculty and the Department of General and Social Pedagogy.

The description of teacher education presented here demonstrates that there is no special separate system of VET teacher preparation at Lviv University. After completing a bachelor's or master's degree at the university, the graduates have the opportunity to find a job at secondary schools, vocational schools and colleges, and higher education institutions. Our analysis shows that teacher education at the university is currently marked by the following characteristics:

- a predominance of basic (fundamental) knowledge
- a discrepancy between the education system and the needs of the current labour market
- an insufficient level of psychology and pedagogy, practice, and applied courses
- a lack of readiness on the part of graduates to work in the system of secondary, higher, and vocational education and a lack of knowledge concerning contemporary production, business activity, and teaching practice (according to the graduates' assessments).

In general, vocational and teacher education at the university is more theoretical and academic than practice-oriented and applied. The graduates are considered to be more scholars and scientists than practitioners who are the experts in their vocational field and are capable of solving urgent problems. A number of teachers at the university have a stereotypical idea of what academic, scientific, and professional knowledge is appropriate for effective, high-quality teaching. Therefore, many teachers do not realize the significance of pedagogy and didactics for vocational training. They consider their main task as providing a system of thorough theoretical knowledge that reproduces the entire structure and content of the corresponding science. This approach is distant from practice, reality, and market needs. The main strategy for improving the vocational and teacher education system at Lviv University is thus to integrate production, career technology, and specific vocational activity into the theoretical content.

Participation in the project 'Improving teacher education for applied learning in the field of vocational education' (574124-EPP-1-2016-1-DE-EPPKA2-CBHE-JP) has opened up the prospect of enhancing the quality

of training for future teachers, particularly for VET, under the influence of the European experience. The main step towards improving teacher education according to the project objectives is to identify the problems and find a means of solving them and making some changes. The main problem is that teacher education at Lviv University, as mentioned above, is oriented mainly towards training secondary school teachers, and the issues of vocational education and training are not included in the content of the pedagogical courses. Consequently, the students do not receive coherent and focused teacher training in the field of vocational education, although they can work at a vocational school after graduation.

The analysis and content of teacher education at Lviv University defines the problems with vocational education teacher training to be addressed:

- the interconnection between general and vocational education is insufficient, and as a result there is no efficient vocational education teacher training system
- there is a discrepancy between pedagogical and didactic theory and its practical orientation and a weak interdisciplinary link between theoretical and practical courses
- the courses dealing with teacher education are not sufficiently application-oriented (even their titles are general)
- there is no unified control and regulation of teaching in the pedagogical courses
- the quantity of pedagogical courses is low compared with the total number of subjects students study at the university
- students are not motivated enough to work at a vocational school
- it is impossible to motivate students to work as teachers at vocational schools in the compulsory pedagogical courses
- the level of teacher training in the context of the current philosophy of education is insufficient
- traditional, teacher-centred methods predominate at the university, and students are not sufficiently prepared for applying innovative methods;
- the internship (professional practice training) is organized mainly at places connected with the concrete field of study rather than at industrial enterprises, companies, or firms

- the teaching practice takes place chiefly at secondary schools, gymnasiums, lyceums, colleges, and higher education institutions;
- students complete the teaching practice after having spent (roughly) a month in the theoretical courses
- the management of students' internships is limited to certain requirements and guidelines.

On the basis of this list of problems, we can single out the main needs for developing VET teacher preparation at Lviv University that are relevant to the project objectives:

- orienting teacher preparation more closely towards VET teacher education
- introducing new pedagogical courses for VET teacher preparation at some faculties
- building up links with vocational schools and companies
- carrying out the internships at vocational schools and colleges and improving their quality.

There are certain barriers to implementing the project tasks, which involve organizing an integral and independent teacher preparation for VET that is separate from general teacher education at Lviv University. The faculties are actually responsible for teacher education at the university and for making decisions on the curricula and choosing courses, in particular pedagogical ones. Currently they do not have sufficient capabilities and resources for providing VET teacher education at the university, but in the near future this goal can be realized. However, it is possible to implement some structural elements in the VET teacher training system. The Department of General and Social Pedagogy, which is responsible for teaching pedagogical courses at different faculties, can introduce some changes to the general system of teacher education at the university to address the needs for VET teacher training. Possible innovations in the context of the project tasks are:

- orienting pedagogical courses towards vocational education and VET teacher education
- strengthening the role and function of didactics and teaching practice in the field of VET in the structure of pedagogical courses or offering separate courses for this purpose

- developing a profound understanding of conceptual approaches, learning theories, and didactical concepts in students
- developing students' knowledge and skills using new teaching technologies for classroom instruction
- developing students' orientation and motivation for working as teachers at vocational schools in pedagogical courses
- organizing teaching internships for students of some faculties at vocational schools and colleges.

As a means of implementing the project tasks for the development of the teacher education system for VET, Lviv University has placed emphasis on training students of the specialty 'Special Education' as teaching assistants (tutors) qualified to provide assistance on matters concerning employment to students of vocational education with special needs who are experiencing significant difficulties in mastering the professional skills and performing the activities required at various companies. The problem of employing people with special needs is very urgent in Ukraine today and requires an immediate solution. After graduating from a special or inclusive secondary school, these persons cannot find a job, and they have limited options for employment in the open labour market in Ukraine. The main problem is a lack of appropriate support (guidance) for the people with special needs at the workplace, resulting in a significant staff turnover (Ostrovska, 2017, p. 9).

The factors that determine the need for training teaching assistants in vocational education for students with disabilities are:

- the difficulty disabled persons have finding a job after graduating from secondary or vocational school
- the need to help and support disabled persons in choosing a profession that corresponds to their capabilities
- awareness of the difficulty these persons experience mastering professional skills in the process of vocational training
- the need for psychological and pedagogical support in the process of training
- a sense of the difficulty involved in the process of professional activity in various spheres of production
- the importance of developing the disabled person's motivation to engage in professional training and activity.

The training of the assistants (tutors) aims to help the persons with special needs acquire professional knowledge and skills for the relevant activities at enterprises, companies, etc. and provide them with necessary assistance at a work placement. Moreover, these specialists can also teach the employers and employees special techniques for cooperating with persons of this category. The system for training the VET teaching assistants includes, first of all, learning the key elements of psychological and pedagogical guidance of disabled persons, the needs of the local labour market, and the main characteristics of local businesses and practical training in the work placement.

2 Development of innovative course structures and didactic innovations influenced by ITE-VET

2.1 The curriculum revision process at IFNUL

In the framework of the project, we have started revising pedagogical courses and programmes and developing the study plan for the new specialization in training assistants of vocational education teachers for persons with special needs. The experience we gained in workshops, teaching seminars dealing with didactic issues, and visits to vocational schools in EU partner countries have encouraged us to introduce innovations to pedagogical courses and develop a new specialization.

Our analysis of this experience has enabled us to consider the vocational orientation of teacher training as the harmonization of two interrelated aspects – vocational and pedagogical, including didactics (Ravchyna, 2018, p. 168). The vocational component involves the teacher's competence concerning the specific nature of a specialist's future activity with regard to the corresponding subject, the real processes of production, and social and cultural life. The pedagogical aspect includes teachers' personal positive attitude towards the professional activity and students and their ability to organize a productive educational environment and a dialogue with them, to adjust pedagogical influences to the students' individual characteristics, needs, and interests, and to foster self-improvement.

To reinforce the vocational orientation of the programme, we have sharpened the profile of the normative pedagogical courses for teacher

education. To give students a profound understanding in and teach them key concepts of vocational education, we have revised the content of the pedagogy course and made it more applied and practice-oriented. New issues concerning vocational pedagogy have been included in each theme of the normative course:

- Vocational pedagogy as a component of the system of pedagogical sciences
- Theoretical and methodological foundations of vocational education;
- Becoming a teacher of vocational education
- Foundations of vocational didactics
- Content of vocational education
- Developing students' vocational knowledge and skills (according to the specialty)
- Teaching methods and technologies in vocational school
- Motivating students to learn
- Evaluating students' learning
- Classroom management.

Significant opportunities for preparing a teacher in the field of vocational education occur at the master's level. In our opinion, the vocational orientation of teacher training in a master's programme should involve, first of all, developing students' vocational and pedagogical competencies to allow future specialists to develop the vocational skills that will be necessary for their professional activities. That is why it is necessary to focus on the following aspects in the process of teaching specific pedagogical and didactic topics to prospective teachers: clarifying the main goal of their vocational training at vocational school or college; identifying and considering the main objectives of particular training courses; discussing the expected outcomes of the instruction; evaluating and choosing the appropriate teaching methods; analysing the significance of the learning context, the educational environment, and the innate characteristics of future specialists (Lucas/Spencer/Claxton, 2012, p. 108).

The realization of the project tasks, including, first of all, the revised and new study plans and the implementation of modern learning theories, depends primarily on the lecturer's position and beliefs concerning the corresponding philosophy of education. Particularly in the field of VET, teacher training is based on the principles of student-centred edu-

cation, which forms the foundations of the modern philosophy of education and is set out in the Bologna process. The workshops with European partners and the teaching seminars conducted by them have encouraged us to single out and outline the following conceptual approaches: learner centred, constructivist, activity, dialogue, developmental.

The learner centred approach stresses that a student is responsible for his or her own development and is the main actor in learning; students are able to choose and make decisions on their own; their behavior depends on their interests and needs. The key ideas of the learner-centred approach that a lecturer has to adhere to are focusing on students; seeing learning as student's activity; cooperating with students; focusing on students' (intrinsic) learning motivation (meeting students' needs); providing guidelines and support to students.

The constructivist approach involves teaching methods that are centred on the student and a number of innovations in classroom learning. It states that individuals learn better when they actively construct the knowledge and understanding on the basis of their own experience than when they simply receive the information (Lefrancois, 2005, p. 158, 206; Santrock, 2001, p. 318). In this regard, a lecturer teaching and transferring knowledge to students observes the following the principles: knowledge construction through the use of cognitive strategies; meaningful learning on the basis of personal experience; student engagement in 'authentic and situated' activities; learning in a learning community; learning in a productive educational environment.

According to another approach, the activity approach, teaching is a basic means of developing human consciousness, feelings, and behaviour. In order to form certain skills in students, a teacher should organize activities in which they practice the relevant operations and receive the appropriate experience. The main principles of the activity approach are development of knowledge and skills in the related activities; learning as gaining experience in the activity; students as the main actors (subjects) in classroom activities; goal-directed, task-oriented activity; student reflection of individual actions; and the creative character of student activity.

The educational process is efficient if it is based on a dialogue among equal partners, involving interaction and communication that enable teachers and students to share their information, opinions, and experi-

ences. To make conversations into a dialogue, the teacher should observe the following requirements: fostering equal interaction between teacher and students; giving students the right to a personal vision, judgments, and choice; listening with understanding; responding rather than reacting; making judgments without personal criticism; encouraging positive feelings in the classroom.

The main idea of the developmental approach according to L. Vyhotskyi is that learning must be ahead of human development. In order to develop the personality of students, the lecturer should focus on the zone of 'approximate development' that determines the students' abilities to master what they cannot yet do but are able to learn 'tomorrow' in cooperation with the teacher (Vyhotskyi, 2008, p. 431, 434). For this purpose, the lecturer provides students with different types of support (scaffolding) according to their individual characteristics and gradually reduces this support depending on their success and learning outcomes (Lefrancois, 2005, p. 86).

It is important to follow the approaches described above to create a productive educational environment for training prospective teachers, particularly in the field of VET. Such an environment enables students to observe, consider, and imitate the effective models of teacher activity and behaviour. The main conditions for organizing an effective educational environment in pedagogical courses to influence the development of future teachers' pedagogical consciousness are stimulating the active participation of students; constantly appealing to the pedagogical experience of future teachers at each stage of the educational process; organizing the teaching and learning in the context of the future teachers' professional and pedagogical activity; coordinating theoretical courses and practical activity of students while choosing and applying teaching methods; identifying the lecturers' and students' expectations from the learning process; providing them with support and assistance, and gradually eliminating the support according to their success; applying the content of the pedagogical courses and didactic methods to meet the needs and interests of students; and engaging the future teachers in reflection on their own pedagogical activities as well as in the self-assessment of their own learning successes.

The organization of VET teacher training at Lviv University on the basis of the revised conceptual approaches meets the contemporary ed-

educational challenges and fulfils the project tasks as well. At the same time, the learner-centred conception opposes the traditional conception of teacher-centred education. The modern philosophy of education promotes the development of a free creative personality who is interested in learning and makes his or her own choices and decisions. The ideals of a respectful, trustful attitude and a relationship based on mutual trust and cooperation are especially important for students with special needs who require special help and support due to their particular characteristics.

2.2 Problems associated with training persons with special needs

As noted above, there are some obstacles to the employment of persons with special needs (Ostrovska/Ostrovskyy, 2017, p. 9). At the same time, these persons can learn a lot of professions that fit their capabilities, but mainly with the help of skilled specialists. We are considering training tutors to help persons with special needs find employment. Kateryna Ostrovska, the head of the Department of Special Pedagogy and Inclusion, and Ihor Ostrovskyy initiated a study to find a means of helping individuals with disabilities, in particular those with autism spectrum disorders, to qualify themselves for a desired and appropriate profession. The participation in the project helped us to think about how to support individuals with special needs in choosing an appropriate profession and mastering the necessary professional skills, to identify what specialists these exceptional persons need and what their functions should be, and finally to define the goals and to develop curricula and training programmes for appropriate assistants for these individuals. Contacts with EU partners, work sessions, and visits to the vocational schools in EU partner cities encouraged us to organize training for students specializing in 'Special Education' as teaching assistants (tutors) on employment and vocational education for persons with special needs who experience significant difficulties in mastering vocational specialties and performing the production activities. The main purpose in introducing a new specialization was to unite the efforts of the university, vocational schools, and enterprises to train vocational education teaching assistants. The first step in achieving this goal was to diagnose the specific characteristics and potential of persons with special needs (taking the

example of students with autism) and assess their future employment opportunities.

K. Ostrovska and I. Ostrovskyy carried out a special study on the ability of adolescents with autism to perform their professional duties in which they had a group of such adolescents work in a protected workshop for six months in cooperation with personal assistants (Ostrovska/Ostrovskyy, 2017, p. 10). The results of the study indicate that in comparison with healthy peers adolescents with disabilities show the lowest scores on the scale 'behavior in communication between people'. The average indicators are on the scale 'professional skills' and these scores show that, even with the help of assistants, students with autism cannot master professional skills sufficiently because of their natural isolation and autistic limitations. However, due to their natural isolation the adolescents of this category demonstrate sufficiently high 'autonomy' and 'independence'. They achieve the highest scores on the scale 'behaviour at the workplace', as they are able to carry out their professional duties carefully if the labour operations are not complicated and require the constant repetition of monotonous movements. The results of the study confirm that the indicators of student vocational competencies on which adolescents with autism disorders tend to score high are the outcome of the methods and work of personal assistants supporting and assisting them in mastering particular labour operations in the workshop.

The name of the new qualification for graduates of 'Special Education' who are expected to perform the functions of the assistant or tutor on employment for persons with special needs was defined early on in the project. In February 2018, Lviv University approved 'assistant master of production training' as a new specialization for the specialty 'Special Education'. The curriculum of the new specialization provides didactic, psychological, and pedagogical training, vocational education, and education in the field of modern information technology. The didactic aim of the training is to develop the assistants' ability to select and prepare teaching materials, to assess their quality in terms of modern requirements, and to apply didactic innovations in teaching and learning regarding the specific characteristics of students with disabilities. The psychological and pedagogical aspect includes the development of the skills to apply innovative teaching technologies for classroom instruction that meet the goals of the training course or the educational programme

as a whole and foster in students the ability to provide students with disabilities support and assistance, to reinforce their positive motivation, to solve conflicts, and to develop cooperation, taking into account the psychology of interpersonal relations, large and small groups, and age psychology. The vocational education component of 'the production training' specialization means that future assistant masters should acquire knowledge of labour market needs, of the specific activity in production, businesses, and corresponding workplaces, and of the ethics of labor and civil relationships, and that they should develop skills in performing basic labour operations, analysing the various situations on the labor market and production, etc. The training in the field of information technologies involves the development of skills in applying modern information and communication technologies for preparing educational materials and organizing the interactive communication of participants in the educational process.

The professional activity of the graduates in the specialization 'assistant master of production training' is expected to cover the following areas:

- work as a tutor for the employment of persons with special needs
- organization of social and educational work
- teaching of special education at higher and vocational education institutions or postgraduate education centres
- management of personnel development
- organization and development of training and retraining programs for employees on the use of innovative didactic and IT technologies.

2.3 Course structure and objectives

In accordance with the tasks and requirements of the project, a new curriculum has been developed for the specialization 'assistant master of production training' at IFNUL. The automotive and publishing businesses have been chosen as potential places for future tutors to complete the required internship. These industrial spheres are the most favorable for the employment of people with special needs. There are many vacancies today in the labor market for positions in these areas that are not very labor-intensive. These are therefore positions that can be filled by

persons with disabilities. In developing the study plan for the new specialization, we tried to achieve an equal balance between the pedagogical, didactic, and vocational training of future assistant teachers. In line with European experience and following long-term course changes, the final version of the study plan includes the following training courses:

- Methodology and Didactics of Vocational Education – 3 ECTS
- Foundations of Vocation-oriented Education – 10 ECTS
- Models and Technologies of Social Rehabilitation Work – 3 ECTS
- Ergotherapy – 6 ECTS
- Foundations of the Automotive and Publishing Business with practical training in educational workplaces – 5 ECTS
- Work in Production Workshops – 3 ECTS.

The ‘Methodology and Didactics of Vocational Education’ course develops the system of basic knowledge and skills necessary for the successful vocational and pedagogical activity of teachers at institutions of vocational education and for their further professional development. The course gives future assistant masters of production training a profound understanding of vocational pedagogy and the didactics of vocational training. They are acquainted with the systems of vocational education in Europe and Ukraine and with didactic systems of vocational training. The future tutors learn about all aspects of vocational pedagogy regarding the vocational education of students with special needs. They are familiarized with the current conceptual approaches, analyse the content of vocational education at vocational schools and colleges, learn about innovative teaching and learning theories for classrooms at vocational schools, and acquire skills in applying innovative teaching technologies and methods for the inclusive classrooms while working with diverse students. The future assistant teachers develop knowledge and skills in planning and conducting lessons at vocational schools and assessing the students’ achievements, including those of persons with special needs. Moreover, they improve their understanding of practice training in the system of vocational education. Finally, the students learn and discuss various issues regarding the professionalism and skills of an assistant master of production.

The ‘Foundations of Vocation-oriented Education’ course is aimed at developing the future assistant teachers’ skills in organizing psycho-

logical and pedagogical support for students with special needs, particularly in selecting the appropriate profession for their needs, interests, and abilities and in adapting to the professional environment at the workplace. First, the future specialists are familiarized with the types and the specific features of vocational and technical professions, learn about the goal, structure, and content of vocational orientation and the employment system for persons with disabilities, and are acquainted with types and forms of so-called vocational guidance work and support for persons with special needs. They also develop their skills in professional counselling, choice, and adaptation as prospective assistant teachers of vocational education. This course is also determined by its practice orientation. The future specialists are engaged in the following authentic service activities: providing orientation programs for pre-vocational preparation of the students with special educational needs; compiling and analysing the professiogram as a model or template for special education teachers, which includes the knowledge, skills, and qualities necessary for performing the basic functions involved in assisting students with special needs; elaborating vocational programs for people with different levels of functional limitations; organizing individual and group work with the special education students and their parents on the issues of vocation orientation and choice; conducting vocation-oriented training workshops.

The course 'Models and Technologies of Social Rehabilitation Work' equips the students with psychological and pedagogical knowledge and skills in pedagogical activity as prospective assistant masters of production training. This course is important in that it helps future specialists to acquire a system of skills in applying a set of models, techniques, and means of rehabilitating the psychomotor, psycho-emotional, and social development of persons with various disorders. The course involves teaching the future specialists to create an inclusive educational environment and providing social and pedagogical support for students with disabilities in this environment. Thus, students are expected to know the modern philosophical foundations of pedagogical activity in the context of inclusion. In addition, they should be able to analyse and evaluate the students' educational abilities, organize the productive learning of students in the inclusive class, apply the complex of methods, means, and tools for training students with different disorders, and organize com-

munication with persons of different ages and levels of psychophysical development and their families.

The ideas of rehabilitating students with special needs continue in the specialized course 'Ergotherapy'. Its aim is to develop the future specialists' skills in selecting and using various techniques of ergotherapy for the rehabilitation and socialization of young people with disabilities. The course creates prospects for specialists to master the methods and techniques of ergotherapy for youth and adults according to the peculiarities of their psychophysical development with the aim of their rehabilitation. In addition, it teaches them skills in organizing classes by means of ergotherapy for different categories of people with disorders. Finally, it provides them with the ability to work on the violations of self-service and socialization of persons with special educational needs and to organize the work of a multidisciplinary team for the restoration of individuals' working capacity in the case of injuries to and disorders of the brain and spinal cord.

Future specialists have to be well informed in the relevant field of production, business, etc. While the previously described courses develop their psychological, pedagogical, and didactic knowledge and skills in providing guidance to students with disabilities, vocation-oriented courses help them to master the main techniques and tools for supporting these students in the vocational training and internships. The 'Foundations of the Automotive and Publishing Business with practical training in educational workplaces' course develops future specialists' technical knowledge and skills in the automotive and publishing businesses as well as their knowledge of the didactics of teaching subjects on production training (in the car repair and publishing businesses) for students with special needs. The course teaches prospective specialists to carry out labour operations in the fields of car repair and publishing, work with hand tools and adhere to the rules of safe working with them, plan instruction on each topic according to the programme of production training and organize the lessons, carry out profound diagnostics of students with special needs and vocation-oriented work according to their specifics.

The 'Work in Production Workshops' course is closely linked to the previous one. This course is aimed at developing prospective tutors' skills in providing guidance to young people with special needs at the

workplace, in particular while working in production workshops. First of all, they have the opportunity to become acquainted with European experience on the employment of youths with special needs, to learn the requirements and principles of organizing production workshops for youths with certain restrictions, to comprehend and follow the safety rules at production workshops, and to learn how to organize a workplace, plan the labour process, and perform technological operations.

The courses described above are normative, interrelated, and complementary. Altogether, they provide a coherent, integral training system for the assistant master of production training. Each of them covers certain aspects of professional training of specialists (didactic, psychological, and pedagogical, directly professional). All of these courses are practice-oriented and focused on the practical activities of the prospective specialists. The content of their pedagogical activity, disclosed in the courses, is based on the principles of modern conceptual approaches to education analysed above. The teaching of these courses is also planned to be organized on the basis of these approaches.

3 Implementation of new forms of practice orientation based on ITE-VET

The practice orientation of teacher training, in particular that of vocational education teachers, is realized by means of introducing the content of pedagogical courses in the professional context, applying active and interactive instruction methods and techniques that involve students in various types of practical activities, and improving the quality of practical training by promoting targeted pedagogical guidance and contacts between the university, school/colleges, and companies. The professional context of the pedagogical courses presented above includes a needs analysis of the modern labour market, a list of modern occupations, in particular the names of professions in demand, examples of practical applications of theoretical issues in different fields of business, examples of professional work at the workplace, relevant problems in the pedagogical activity of VET teachers, classroom-related problems at vocational schools, the patterns involved in applying innovative techniques at vo-

cational schools, various situations in the vocational training of students with special needs, etc.

The practice orientation of teacher education increases if it is based on the students' experience and at the same time develops it. Contrary to traditional (teacher-centred) education, modern (learner-centred) conceptual approaches state that learning is effective if it is organized to allow students to gain their own experience. This means that learning is a process of constant independent thinking, searching for knowledge and personal understanding, and practicing actions. Effective methods of instruction that develop and strengthen the practical orientation of the vocational education teacher's training on the basis of the students' activity include the following: observation and analysis, reflection, dialogue, discussion, situational learning, the solution of authentic problems, cases, techniques of critical thinking, imitation, role exercises, simulations, story-role games, etc.

Teaching practice is doubtlessly of great value for developing the practical skills of future teachers, in particular teachers of vocational education. According to the new study plan in the framework of project tasks, the practice training in the bachelor's programme for future assistant masters of production training includes the following internships at different stages:

- Training practice (volunteering) – 3 ECTS, 2 weeks
- Training practice (psychological and pedagogical) – 3 ECTS, 2 weeks
- Teaching propaedeutic practice – 3 ECTS, 2 weeks
- Teaching practice – 3 ECTS, 2 weeks
- Production (at enterprises, workshops, companies) practice – 9 ECTS, 6 weeks.

The first, a volunteering internship, starts in the fourth semester for second year students and is passive. It involves visiting and analysing special lessons by psychologists, learning the characteristics of psychophysical development of individuals with disabilities, and outlining the main specifications of their disorders. The students also study the main characteristics of the special education teacher's work. The next internship, the psychological and pedagogical internship, introduces students to active practice training, as the future specialists start to conduct special psycho-corrective individual and group classes as special psychologists,

taking into account the peculiarities of individuals' development and their restrictions. It is completed in the fifth semester for third year students. In this internship, the future specialists also learn the specific features of the special psychologist's work, develop a programme involving a special examination of students with special needs, and conduct this programme survey using appropriate methods. They implement the same tasks during the teaching propaedeutic practice, but the difference between these two internships is in the age of the students with whom the future specialists interact and in the number of various types of rehabilitation centres and schools they have to choose from, also including the vocational schools. During this internship they have the possibility to work in inclusive classes at vocational schools and perform the functions of an assistant master of production.

It should be noted that the training for the qualification 'assistant master of production training' begins with the third year in the fifth semester. According to the project tasks, future specialists are therefore able to obtain professional experience in VET outside the university classroom at a very early stage of their studies. For the first volunteering internship, we expect to include vocational schools, business companies, enterprises, and production workshops in the practice bases to enable prospective assistant masters to learn about the workplaces their future students are likely to be employed at. The experience gained during this practice will allow the future specialists to comprehend the training courses in the specialty and better understand their practical purpose.

The final stage in learning the profession of the assistant master is the production internship at enterprises, companies, workshops, etc. The objective of this internship is to acquaint students with the content, forms, and methods of production activity which involves young people with special needs and to develop their skills and abilities in providing guidance to youths with special educational needs who work in production workshops (Ostrovskyy/Fitsyk/Syvyk, 2018, p. 5). Studying the work of enterprises enables future specialists to learn about the main issues, types, and principles of organizing production workshops for youths with special needs, observe the documentation, and become acquainted with the equipment of production workshops. They also explore the nature of the psychological and pedagogical support (guidance) carried out by special psychologists and analyse the work of young people

with special needs at the workplace. With the help of special methods, future specialists investigate the professional competencies of people of different ages. On the basis of the results, they conduct professional individual or group classes for persons who need support while working in production.

The main base for the production internship is the Employment and Rehabilitation Centre for persons with disabilities, which was established at the Faculty of Pedagogical Education of IFNUL on the basis of an auto repair workshop during the participation in the project. The centre has a miniature printing house, an automotive workshop, a training hall, and rooms for individual counseling. Today, persons with special needs attend the centre to learn about the auto mechanic and printing businesses.

Since the creation of the experimental platform of this centre, the following steps have been taken:

- uniting parents of the young people with disabilities in NGO's
- organizing systematic training workshops for the parents, employers and employees, and persons with special needs
- designing further ways, tools, and means of developing the centre as a base for vocational education and employment of persons with disabilities
- engaging students of the specialty 'Special Education' in work with special students at the centre
- outlining the prospects of using the centre as a base for production internships for teacher education, in particular for training assistant masters of production training.

Consequently, the new form of practice orientation for training assistant masters at the Faculty of Teacher Education in Lviv University involves the illumination of the psychological and pedagogical content of courses in a professional context, the engagement of students in a variety of practical activities by means of applying innovative methods and strategies, and an organization of practice training that provides students the opportunity to obtain early practical experience beyond the study of pedagogical theory as well as to acquire pedagogical skills at workplaces where they are likely to work after graduation.

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Teacher Education for VET in the Vasyl Stefanyk Precarpathian National University under the Erasmus+ Project ITE-VET

1 Formation of teacher education department in the Vasyl Stefanyk Precarpathian National University

At the beginning of this process, the Carpathian region faced a sharp shortage of teaching staff. In October 1939 teachers' workshops were already established, but neither this nor the involvement of teachers from eastern Ukraine could resolve the problem. Thus, local authorities proposed the establishment of a teacher institute in Stanislav (Ivano-Frankivsk, since 1962) in the regional centre, and in January 1940, preparations for its opening began. As a result, on 1 March 1940, the doors of the new educational institution opened. The institute contained three departments: History, Physical Mathematics, and Philology, with two branches: one, for Ukrainian Language and Literature and another, for Russian Language and Literature (Ostafiychuk, 2010, p. 248).

The Institute initially did not possess its own building and was located in an unfinished, commercial school building. For some time, there was also a pedagogical school located there. Complexity, a dearth of educational equipment, and a lack of educational and methodological literature in the library: these and other obstacles had to be overcome during the educational process. Despite those challenges, the institute actively developed its programs. In the pre-war period, 900 future teachers studied there in the full-time and part-time departments. However, shortly after the institution opened, World War II interrupted the staff's work. Many students and teachers went to the front, and eventually, some of them were evacuated. In the World War II years, the Teaching Institute was closed, its property was completely plundered, and the

training building was burned down. The amount of damages reached three million roubles (Holovaty, 2015, pp. 39–40).

After the region's liberation, a number of measures were taken to restore the Stanislavsky Teachers' Institute's work. The first post-war academic year began on 1 November 1940. In July 1945, the first 13 graduates of the full-time training program received their teachers' diplomas. During the 1945–1946 academic year, the institute was temporarily located in the building of one of the schools in Ivano-Frankivsk. Concurrently, the main building was soon raised from its ruins, and reconstruction continued. The Institute began its activities in the nearly renovated building during the 1948–1949 academic years, and the restoration works were completed in 1950. From year to year, the number of students grew: in 1944–1945, 354 students studied in the part-time departments of the Institute; in 1949, there were already 790 students. In total, during the Stanislaw Teachers' Institute's years of existence, 1457 teachers were trained for schools in the region.

A new phase of the educational institution's work began in the 1950s. By the decision of the Council of Ministers of the Ukrainian SSR, on 4 August 1950, the Stanislavsky Teachers' Institute was reorganized into a pedagogical establishment. Training for teachers of higher qualification began (Charter of the Precarpathian National University, 2015, p. 1). One of the most important challenges that the educational institution's staff addressed was improving the quality of the instructional staff. As a result, in the 1952–1953 academic years, there were 58 teachers; ten of them were candidates for associate professor in sciences. Then, by the 1955–1956 academic years, there were 79 candidates, including 21 for a PhD, as associate professor. Concurrently, the training base was strengthened, and new departments, offices and laboratories were opened. The Library Fund increased fourfold, from 38,000 books in 1951, to 167,000 in 1958 (Ostafiychuk, 2010, p. 248).

The need for the teachers in rural and secondary schools in the Precarpathian region as well as other areas of western Ukraine remained significant and led to the transition of the Institute: from 1958, teachers with a broad profile were educated, and they could teach not just one but several subjects. They were trained in such specialties as 'Ukrainian Philology and History', 'Russian Philology and History', 'Physics, Mathematics and Drawing', 'Ukrainian Philology, Music, and Singing'. In 1959,

a new faculty department opened for the training of primary school teachers, and the first set of 50 people studied the specialty 'Methodology and Pedagogy of Primary Education' (Trade Union of the University, 2012, pp. 6–8).

In 1962, the institute returned to the student admissions for one specialty (with the exception of 'Ukrainian Philology, Music, and Singing'). In the following year, 1963, the institute joined the general faculty. This division became the fourth one, along with Historical Philology, Physical Mathematics and Methodology and Pedagogy of Elementary Education. The Faculty of General Sciences was intended to ensure that a higher education was available for the courses' attending students at their place of residence without leaving the industry. Among the students were hundreds who studied at the higher educational institutions in Kyiv, Kharkiv, Lviv, Donetsk, and Chernivtsi, but lived and worked within the Ivano-Frankivsk region (Kononenko, 2000, p. 35).

Gradually, scientific activities developed at the Institute. In 1956, the Scientific Notes of the Institute began. From the educational institution's establishment to 1965, 23 instructors defended their PhD dissertations. However, at that time and under those conditions, this was of great importance for the establishment of an educational institution.

In 1966, the Institute opened a music and pedagogical faculty, which trained teachers of music and singing for secondary schools. Important changes also occurred in other departments. In 1969, separate historical-pedagogical and philological faculties were distinguished from the historical-philological faculty. Historically and pedagogically-trained future historians and social scientists simultaneously studied and also gained access to another specialty: the methodology of educational work (Ostafiychuk, 2010, p. 249).

The proclamation of Ukraine's independence and the development of national statehood created fundamentally new conditions for the development of the whole system of education, including higher education, and set new qualitative tasks for educators and scientists. It was necessary to create opportunities for the inhabitants of the region to achieve a broader, more profound education at the level of modern world standards, which could only be provided by a classical university. That is why, on initiative and on request of the staff of the educational institution on August 26, 1992, the First President of Ukraine Leonid Kravchuk

signed a decree on the creation on the basis of the Ivano-Frankivsk State Pedagogical Institute of the Vasyl Stefanyk Precarpathian University (Kravchuk, 1992). At that time, the educational institution, due to its scientific potential, became one of the leading Ukrainian educational institutions, with a total of 20 doctors, professors and 181 PhD., associate professors (Ostafiychuk, 2010, p. 253).

Taking into account the significant contribution of the Precarpathian University to the training of highly skilled specialists, the fruitful scientific and scientific and pedagogical work of the collective, on August 21, 2004, in accordance with the Decree of the President of Ukraine No. 958 dated August 21, 2004 and the order of the Ministry of Education and Science of Ukraine No. 718 of September 13 2004 Vasyl Stefanyk Precarpathian University was granted national status (Vitenko, 2011, p. 216).

2 Regional problems of the vocational education teacher training

Fast-moving changes occur in all spheres of life of modern society, with an active development in the latest technologies, an intensification of the complexity of cognitive processes, and an increase in attention to the vocational training of specialists in the modern vocational education system. Educational reform, in particular at the functional level of vocational education, requires the uplifting of a new generation of highly skilled personnel, along with the resolution of challenges in improving the quality of vocational training through mastering the knowledge and skills of the chosen profession.

The modern model for vocational education development is aimed at the formation of a mobile personality capable of independent and effective activity relative to the realities of modern life, as caused by a sharp, diverse combination of political, socio-economic, and other changes. That is why the education system actively responds to the latest socio-cultural trends, through the constant updating of the content of education and the introduction of new methods in pedagogical circulation, means, and forms of education and training, through the improvement of already well-known and effective approaches. Thus, an effective synthesis of traditions and innovations is created. It is important to highlight

a number of reasons for reforming the education system, so as to increase its effectiveness. The first reason is *humanistic*: its essence lies in the fact that it is necessary to appreciate each and every person and, as a result, strive to provide each one with the most appropriate education and profession according to the individual's abilities and wishes. The second reason is *geopolitical*, which reflects the necessity to strengthen society's social structure, as well as the social contracts with its citizens, in order to establish and develop various societies, organizations, firms, and companies that can successfully cooperate, maintain their position, and function competitively in the labour market. The third reason – *the strategic one* – signifies that it is important to improve the vocational education system in order to ensure productivity and economic prosperity for the future, and that is why it is necessary to teach children how to become productive adults in the here and now.

Vocational education is an integral part of the continuing education system; it ensures the realization of the needs of a person in the mastery of labour professions, specialties, and qualifications, in accordance with the individual's interests, abilities, state of health, and the social order of society and the state. Vocational education is a complex amalgamation of pedagogical, organizational, managerial measures aimed at ensuring the acquisition of knowledge, skills, and abilities by citizens in their chosen fields of professional activity, the development of competence and professionalism, and education in general, along with professional culture. In the overall learning structure, vocational education is an intermediate link between school and higher education (Kourland, 2012, p. 56). The system of vocational education consists of vocational and technical educational institutions, regardless of the forms of ownership and subordination, which carry out activities in the field of vocational education, educational-methodical, scientific-methodical, scientific, educational-production, educational-commercial, publishing-printing, cultural-educational, physical culture, recreational, computing, and other enterprises, institutions, organizations, and bodies managing them, which carry out or provide for the training of skilled workers (Verkhovna Rada, 2014).

The first step in reform was the development of the National Qualifications Framework (NQF) – a structured description of competences and qualifications aimed at the identification of European qualification

system for vocational education output to the global space. There was a need to develop updated professional standards, to describe the content of qualifications, and, consequently, to amend vocational education law (Cabinet of Ministers of Ukraine, 2011).

In this regard, the Ministry of Education and Science of Ukraine is currently considering the 'Standard of Higher Education of Ukraine. The first (bachelor's) level of education branch of knowledge – 01 Education / Pedagogy, Specialty – 015 Professional Education (by specialization)', which specifies the general requirements for the volume of the educational program, the list of competencies of the graduate (integral and general competencies), the normative content of the training of higher education graduates, formulated in terms of the results of training, the form of certification of applicants for higher education, and the requirements for the existence of a system of internal quality assurance in higher education, etc. At the same time, the Standard is based on a competent approach and shares the philosophy of defining the requirements for a specialist laid down in the Bologna Process and in the International Project of the European Commission's 'Harmonization of Educational Structures in Europe' (Tuning Educational Structures in Europe, TUNING) (Ministry of Education and Science of Ukraine, 2017, p. 11).

Hence, higher education should provide a fundamental scientific, general cultural, and practical training for specialists. Thus, it is necessary for university students to be both teachers and students concurrently, and this is only possible with the involvement of the entire community of the educational institution. This is probably the most acute challenge for most modern classical universities, as the courses 'Pedagogy', 'Pedagogical Skills', and 'Pedagogical Practice' are considered unnecessary and unprofitable. In this way, students are not able to fully realize their opportunities during the educational process and to fully grasp pedagogical knowledge. This indicates a decline in ideology, a lack of a sense of duty to their own people, or perhaps a lack of unity with the Ukrainian community.

The state national program for 'Education' foresees the identification of perspective, national and regional needs for the training of workers by profession and levels of qualification for all sectors of the economy, and the development of scientifically-grounded nomenclature for workers'

professions and specialties in accordance with new socio-economic, cultural, and educational needs, in order to optimize the network of vocational educational institutions and other measures that have already been implemented (Cabinet of Ministers of Ukraine, 1993, p. 4). It is necessary also to take into account the fact that most enterprises – factories – in the regions are closed due to ‘unprofitability’ or claimed for the construction of cottage townships on the land.

Thus, in order to determine the technology for training highly skilled workers in their corresponding professions, it should be noted that *the college* is an institution of higher education of the second level of accreditation or a structural subdivision of an educational institution of accreditation level III or IV that provides higher education in related fields of training or in several related specialties; *technical school (college)* is a higher education institution of the first level of accreditation or a structural subdivision of higher educational institutions of the third or fourth level of accreditation, providing higher education in several related specialties (Verkhovna Rada, 2014). The problem is that primarily teachers or masters of production training without higher pedagogic education are engaged in these institutions.

Under the conditions of a market economy, the system of vocational education in the Carpathian region on the basis of its educational institutions could carry out the training of people not working temporarily, improving the skills of workers by agreement with regional state employment services (which are also not very active in this direction).

2.1 Structure and objectives of obtaining Master’s Degree in Pedagogy

While vocational schools and colleges belong to the type of institutions of higher education, most of the teaching staff do not have a higher pedagogical education. That is why in 2015, on the basis of the Department of Pedagogy named after Bohdan Stuparika, the state pedagogical university ‘Precarpathian National University’, (named after Vasyl Stefanyk) opened a Master Programm – field (branch) of knowledge 01 – Education, Specialty – 011 ‘Educational, Pedagogical Sciences’ by specialization ‘Pedagogy of High School’. As a result, at the end of the matriculation, students are awarded a qualification: a teacher of universities and higher

education. The bachelor's degree candidates have the right to enter this specialty. These degree students may be representatives of the adjacent specialties (pedagogical specialties and specialties that have studied pedagogy and have the qualification 'teacher' in the diploma), and non-related specialties (for example: lawyer, librarian, hotelier, IT engineer, etc.). At the end of the matriculation, all graduates have the opportunity to work in various educational institutions, including vocational education institutions in their specialty as a teacher.

Master's qualification may be obtained on the basis of a corresponding educational-professional program for specialist training (the normative term of training is determined by the individual program, taking into account the academic difference between the educational and professional program of a specialist and a master's degree, but cannot exceed one year). The master's studies educational and professional program includes in-depth basic, humanitarian, psychological, and pedagogical, special, and scientific-practical training. Accordingly, the lists of disciplines that include the masters study specialty consist of several cycles: the normative part (1. The cycle of humanitarian and socio-economic training, 2. The cycle of professional and practical training) and the variation part (3. The cycle of disciplines for the choice of the institution: four cycles of subjects of free choice for the student).

According to the terms of the project Erasmus + 'ITE-VET 2016–2018: Improving teacher education for applied learning in the field of vocational education', 574124-EPP-1-2016-1-DE-EPPKA2-CBHE-JP, a number of disciplines aimed at training a specialist for vocational education institutions were introduced into the curriculum of the master program in the field of 'Educational, pedagogical sciences' and the number of hours per practical training was increased. The study of these disciplines is aimed at forming a number of competencies for future graduates. Some of them are listed below, for example:

Competences to study the discipline 'Pedagogy of higher education and pedagogical creativity of the teacher'

Social and personal competences: this is the definition of the scientific concept, which should be the basis for determining the purpose, content, methods, and organization of training, along with the diagnosis of levels of readiness and the compliance of the person with effective work in the corresponding position or in a specific professional field.

General scientific competencies: this includes personal improvement and the performance of public functions; the execution of a certain set of actions; a professional outlook that is based on a person-centred approach, and assistance in the implementation of individual self-development.

Instrumental competences: this includes the ability to act in a variety of problematic professional and social situation, and the capacity to express written and oral communication in the native language.

Competences to study the discipline 'Modelling of educational and vocational training of a specialist'

Competences of social and personal: this includes the formation of the ability to develop and analyse the model of educational and vocational training for a specialist.

General scientific competencies: this includes the system of normative documentations for the education sphere, the system of higher education standards; the basic principles for constructing a model of educational and professional training for a specialist; the goals of education and training; the training goals in cycles; the peculiarities of the distribution of training cycles in educational disciplines; and the content and structure of an educational professional program for training a specialist.

Instrumental competences: this includes the formation of subject skills.

As a result of this work, a comparative description is given for the curriculum for masters in the specialty 'Educational, Pedagogical Sciences' on the basis of the Precarpathian National University named after Vasyl Stefanyk, before the beginning of the project and at the final stage of the project.

Number of Hours under Educational Plan (before the start of the project)

- Training Hours Percent
- Pedagogical (Theoretical) – 630 Hours – 23.33 %
- Didactic (Applied) – 900 Hours – 33.33 %

(under the project)

- Training Hours Percent
- Pedagogical (Theoretical) – 90 Hours – 15 %
- Didactic (Applied) – 510 Hours – 85 %

Table 1: The total Number of Hours Throughout the Course
as a result of the project

	Exams	Tests	Credits ECTS	Total amount	Total	Lectures	Practical	Laboratory	Independent work
Semester 1	4	9	37.5	1125	473	255	210	8	652
Semester 2	9	3	38.5	1155	489	281	172	36	666
Semester 3	4	2	34	1020	112	50	62	–	908
Total	16	14	110	3300	1074	586	444	44	2226

- Training Hours Percent
- Pedagogical (Theoretical) – 720 Hours – 21.81 %
- Didactic (Applied) – 1410 Hours – 42.72 %

Under the tasks of the Erasmus + project 'ITE-VET', namely strengthening the preparation of teachers for work in vocational education institutions, in the draft of the curriculum for 2018–2019, new disciplines were introduced with a total of 600 hours. Among them: 'Pedagogy and pedagogical creativity of the teacher', 'Innovative technologies of education and upbringing', 'Modelling of educational and professional training of a specialist in the pedagogical process in Ukraine', 'Variational models of training specialists in the system of national education', 'Organization of management of educational process', 'Pedagogical conflictology',

‘Training of specialists in the leading countries of the world’. In addition, an increase was provided in the number of hours for practical training, namely, due to the passing of the master’s practice in vocational education institutions, with which contracts were concluded.

2.2 Development of innovative structures for the practical training of professionals at the PNU within the Erasmus + project ITE-VET

Experience demonstrates that, along with the knowledge and skills that students receive while studying at universities, readiness for professional activity is an important component of the characteristics of a future teacher, since only the synthesis of all these qualities is an indicator that allows one to determine the ability to implement a graduate student in the future profession and in the life of society. Thus, the result of the work of an educational institution in modern conditions should be the reorientation of the educational process in order for students to receive the key competencies necessary for solving life and professional tasks and for living a productive life as an individual project. (Vashenko, 1999, p. 53). However, in any practical scientific activity, it is necessary to express the idea and find a form, embodied in which this idea could be integrated into life and become suitable for use. If this statement is correct in relation to any practical disciplines, it is thus all the more important for higher education pedagogy.

Consequently, the purpose of practical pedagogy is to prepare a professional. However, today in the PNU, there is a reduction of some courses and practices in the training of the specialist; in particular, the principle of the relationship between theory and practice is violated. Graduates of the current higher education institutions at the bachelor level, thus, have sufficient theoretical education but cannot effectively apply their knowledge in practice, as they do not receive proper practical training (10 ECTS).

Within the framework of the project ‘Improving teacher education for applied learning in the field of vocational education’ (574124-EPP-1-2016-1-DE-EPPKA2-CBHE-JP), the practical training of graduates at the magistracy level was increased in the PNU:

- Practical practice – 3 ECTS
- Pedagogical practice – 12 ECTS
- Pre-diploma practice / internship – 15 ECTS.

It is known that the practical training of specialists is an integral part of the educational and professional program for their instruction in higher education, according to industry standards of higher education. This endeavour is aimed at consolidating the theoretical knowledge gained by students during study, the acquisition and improvement of practical skills and abilities, the formation and development of students' ability to make independent decisions in the context of a particular professional situation, the mastery of modern methods and forms of work organization as determined by the educational qualification characteristic, to the preparation of specialists in the corresponding fields of training and specialty.

Also highlighted here are competencies that the future specialists of vocational education institutions in the region must master:

- Social and personal competences: life-long learning; the ability to critique and engage in self-criticism; a tolerance for different ideas; creativity and the ability to think systematically; adaptability and sociability; perseverance in achieving goals; caring for the quality of the work performed; theoretical knowledge and practical skills for graduates who can work in a team at the initial stage of work, understanding social phenomena and demonstrating, at the same time, the ability to solve production problems;
- Instrumental competences: the general cultural training of a specialist; the formation of humanity in the person as the basis for their comprehensive development; the formation of their civil position; their ability to take responsible actions; cooperation with other people, which will lead to the integration of society; the ability to act in a variety of challenging professional and social situations; the continuous and consistent acquisition of students with the necessary practical knowledge and skills that will facilitate their further professional growth and career;
- General scientific competences: the application of advanced training of specialists, taking into account predictable trends in the labour market; perspective directions in university training; the relationship of

the fundamental orientation of training relative to professional activity and the close connection with practice; professional orientation and the student's attitude to the profession, future activities; motivational activity.

A more difficult task of practical pedagogy is the education of a professional integrity. The specialist's integrity must be an integral part of such a concept as professionalism. Professional education institutions of a new type such as higher vocational schools, professional lyceums, and colleges should help to resolve this issue: Thus, the primary task of modern professional pedagogy is to develop the content of education for these institutions. Incidentally, the National State Program 'Education' ('Ukraine XXI Century') also maintains the same requirements. (Cabinet of Ministers of Ukraine, 1993).

Currently, vocational education in Ukraine is an industry that has been forgotten by state powers and local deputies. In fact, abandoned to their own devices, tortured by lawsuits for gas and heat debts, and permanently under-funded, vocational institutions are only interested in power as a source of communal property for the sale of land (Voitovych, 2017). Another difficulty facing educational institutions financed from the regional budget for the first time in history is the lack of financing of utility payments – for water, electricity, heating – because the authorities believe that they themselves have to earn money and pay for consumed energy. Yet, this is a protected budget article, and the funds should be directed from the region's budget, not from companies, firms, or public educational institutions. There is no such 'experiment' in any region of Ukraine.

There is also no concrete rescue and upgrading program for vocational schools. These problems have led to the situation where the modern vocational training institutions fulfil only 70% of the regional order for labour training, and the absence of PES students has led to the redundancy of teachers and masters of production training, which has then affected the initial production process (Voitovych, 2017).

The system of higher education is developing today in the context of market transformations, so it becomes possible and necessary to apply to its functioning some economic categories such as 'market', 'commodity', 'demand', 'supply', 'competition', 'competitiveness', 'marketing'.

Among the diverse demands of the market economy, most relevant are the needs of intellectual, cultural, physical, moral development, and self-realization of the individual, as well as the needs of individual enterprises, organizations, and society as a whole in highly skilled labour, in the accumulation and use of scientific, technical, and cultural potential (Knodel, 2006, pp. 38–54). One of the most important criteria in the activity of the higher education institution is the quality of the graduate, a future specialist. In this case, it is precisely this product of the university's activity that is considered, though it is not the only one.

The number of universities in the Carpathian region that provide educational services, methodological, scientific, and technical products is quite large. However, none of them at the professional level prepare future specialists for work in the vocational educational institutions. Thus, in the PNU, within the framework of the project 'ITE-VET', to ensure closer cooperation with the institutions of vocational education, agreements were signed with new bases of practice, such as: the Higher Vocational Technical School of Service Technique and College of Restaurant Service and Tourism (National University of Food Technology).

An integral part of the process of training specialists in higher education institutions is the practical training of students. The purpose is to provide students with a mastery of modern methods, organizational forms, and work instruments in the field of their future professional activities, so as to form their professional skills and capacities for independent decision-making during specific work in real market and production conditions and develop their training needs so as to systematically renew their knowledge and creatively apply them in practice. It is also vital that these students acquire relevant competencies, in particular: *social and personal competences*: the understanding and perception of ethical norms of behaviour in relation to other people and in relation to nature (principles of bioethics); the ability to critique and engage in self-criticism; creativity; the ability to think systematically; adaptability and sociability; perseverance in the achieving of goals; caring for the quality of work performed; *instrumental competence*: skills in working with students; information management skills; *professional competencies*: the ability to carry out a theoretical analysis of a pedagogical problem; the capacity to offer and substantiate hypotheses based on theoretical

and methodological analysis; the aptitude to compile the program, and develop and use methodological tools.

The technology of conveying educational practices involves mastering the system of skills of a specific discipline. For this purpose, the academic group is divided into subgroups, distributed by designated general educational institutions, supervised in such practices by professional methodologists, and teachers in the departments of pedagogy and psychology. In most cases, the training of the subject is organized after the students have mastered the necessary theoretical material.

A working plan for the student of industrial practice is drawn up on the basis of the curriculum and a typical program of practice. It specifies all types of work, the time required for their execution, the manager, and the place of their execution. The list of works is selected in such a way that students have the opportunity to constructively utilize the experience they acquired during theoretical studies, the implementation of laboratory and practical work, and training practices.

The tasks of practical training are the formation of skills and abilities in relation to the implementation of labour and production processes in general, the development of the professional abilities of students, the acquisition of experience in effectively solving industrial situations, as well as the collection of factual material for the implementation of coursework, diploma papers, and projects. During this practice, students must learn to perform actions and operations quickly and accurately, demonstrate well-coordinated actions, and skilfully concentrate their efforts. Such results are achieved with the correct, logical, and scientifically substantiated system of practical tasks and exercises that are rigorously performed by students-practitioners.

After the end of the course, students submit written reports, diaries, specifications, etc. for review by a practice leader from an educational institution. The report should contain information on the implementation of the program of practice, individual tasks, a section on occupational safety issues, conclusions and proposals, as well as a list of studied literature. A report is prepared for the requirements of a single standard of documentation.

The pre-diploma production practice has a deeper task. First, this is the study of ways to organize work in a particular enterprise; mastering the skills of organizational work; generalization and consolidation

of professional skills; familiarization with the economy of a particular production; the selection of the actual material for the completion of the thesis or project. During this period, students also study the problems associated with the material incentive work of the workers concerned, the economic feasibility of producing a particular product at a particular enterprise, increasing labour productivity, environmental safety of production, etc.

In addition, the educational institution conducts the final conferences on the results of the pre-diploma practice, inviting managers and specialists from the basic organizations to participate. The purpose of such conferences is the exchange of experience, the development of measures to improve the practical training of future teacher educators, and the opportunity to contact with employers for the purpose of future employment masters.

The modern model of competitiveness should include the following primary characteristics: the value of goals and value orientations, diligence, a creative attitude towards business, the ability to take risks, an independence in decision making, leadership abilities, the capacity for continuous self-development, a desire for professional growth, an aspiration for a high quality for the final product, and a resistance to stress (Romanovska, 2015).

In accordance with Article 30 of the Law of Ukraine 'On Education' Vasyl Stefanyk Precarpathian National University, as well as other higher educational institutions of Ukraine, prepares graduates for the following educational levels: bachelor's and master's degrees.

Taking into account that colleges and vocational schools belong to the type of institutions of higher education, most of the representatives on the teaching staff do not have a higher pedagogical education, which can be obtained for the branch 01 'Education' by the specialty 'Educational, Pedagogical Sciences'.

3 Conclusion

Since the students of all structural units may study the specialty 'Educational, pedagogical sciences', there is a problem of unpreparedness for future masters to work with students during the educational process.

In preparation for the bachelors, not all specialties study the course 'Pedagogy', 'Pedagogical skills', and not all undergo pedagogical practice.

That is why, in order to increase the effectiveness of teacher training, the proposition was posited to introduce in all structural subdivisions that students pass the 3–4 courses of pedagogical and industrial practice, studying the courses for pedagogical direction – 'Pedagogy', 'Pedagogical skill of a teacher (teacher)', 'Pedagogical conflictology', 'Modelling educational and vocational training of a specialist', etc., so as to involve educational collectives in general educational institutions, colleges, and higher educational establishments in cooperation with higher educational institutions for vocational guidance work. In order to increase the training of specialists, teachers with non-pedagogical education (engineering, technical directions, etc.) are required to finish the master's degree in the specialty 'Educational, pedagogical sciences'.

Thus, as four years of experience has demonstrated, the specialty 'Educational, Pedagogical Sciences', a new form of practical orientation for the training of future professionals of vocational education at the Precarpathian National University, includes the coverage of psychological and pedagogical courses in a professional context, the participation of students in various types of practical training, which provides an opportunity to become acquainted with the specifics of the activities of the program, gaining experience and applying pedagogical skills (of 61 graduates, 50 were employed, namely in vocational education institutions; two found positions as psychologists, 17 became history teachers or physical education instructors, 10 became production training assistants, and five became social pedagogues).

At the same time, there are problems with the preparation of masters in the specialty 'Educational, Pedagogical Sciences', in particular:

1. An increase in the duration of independent work: master students spend about 75 % of their time on specialized master's training.
2. A high degree of individualization of training.
3. A high level of preparation of research work, for which students are practically unprepared (virtually no training is taught in the discipline 'Pedagogical principles of scientific research' in the preparation of bachelors studies, so students do not orient to the stages of scientific work).

While training specialists at the present stage, there is more to address regarding the market, which is characterized by exceeding supply on demand, especially for technical specialties. To a large extent, the conditions are dictated by 'buyers', namely, applicants and students, reinforcing their influence on the quality of educational services and, ultimately, on the whole potential of the university. Thus, the speciality departments are compelled to compete with each other for applicants, funds, materials, technical resources, information resources, and scientific and pedagogical workers, as well as with enterprises offering jobs to graduates of schools and other educational institutions, which makes them sensitive to demands and quickly adaptive to changes in the market conditions.

However, due to the radical socio-economic transformations in the country, the gap between demand and supply is greater than ever. As for active prediction of needs in the results of higher education, the tendency towards inconsistency in the pace of training scientific and engineering staff relative to the pace of scientific and technological progress continues to occur to this day.

Thus, practical training for effective work in vocational education institutions in the region is an integral part of the professional training of a future specialist. After all, the didactic-educational process is nothing but the realization of the goal through the tasks via different methods, in different organizational conditions, using a variety teaching methods, and the content of the training corresponding to the tasks.

Consequently, the fundamental changes that are taking place in the education system of Ukraine require the formation of a new approach to the training of specialists, which will provide not only the necessary level of education, but also the development of professional abilities, the formation of autonomy, non-standard thinking, dynamism in decision-making, and the ability to implement said decisions in future professional activity.

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VET TEACHER EDUCATION IN
UKRAINE – THE EMPLOYERS’
PERSPECTIVE

Sergii Prytomanov, Rodion Kolyshko, Anatolii Garmash

Modern Educational Reforms and their Impact on the Labour Market in Ukraine

Employer Attitudes

1 Introduction

This article was prepared by the personnel of the Institute of Professional Qualifications under the Erasmus+ Project No. 574124-EPP-1-2016-1-DE-EPPKA2-CBHE-JP, “Improving teacher education for applied learning in the field of vocational education” (ITE-VET). The Institute of Professional Qualifications is a participant in this project and at the same time represents the end customer in the system of qualified specialist training – an employer. As the objective of the project is to improve the quality of teacher training in the field of vocational education, the opinion of employers at the final stage of the project should be the decisive factor.

Today, the quality of vocational education and training (VET) is becoming one of the most burning issues. The quality of education cannot be ensured by educational standards and relevant educational programs and curricula alone. One of the most important “input variables” is professional qualification of teachers/instructors working in the field of VET. Methods for enhancing the quality of training for future teachers/instructors are becoming more sophisticated, as teachers/instructors are expected to

- be experts in their specific professional field
- be experts in pedagogy and capable of teaching efficiently
- know what young people need to be taught for their future careers to be successful in the rapidly changing labour market.

From the employers’ point of view, the ultimate goal in changing educational programs and curricula under this project is to enable future VET

teachers/instructors to teach new competencies determined by labour-market demand.

On the basis of this vision of the agenda, we will consider the following issues in this article:

- Brief description of the labour market and new opportunities for analyzing the current state of employment
- Reform of higher education, new approaches to educational programs and curricula based on the learning outcomes
- New concept for vocational education development
- Law of Ukraine “On Education” and new opportunities for vocational qualification development
- Attitudes of employers toward reforms in education in the context of supplying the labour market with qualified specialists
- Brief analysis of educational programs developed by universities under the project
- Conclusions.

2 Brief description of the labour market and new opportunities for analysing the current state of employment

Human capital is regarded as one of the most critical resources in the modern world; the only possible scenario in which Ukraine can enter the world economic system is therefore as a technologically developed country with the relevant level of labour potential. Over recent decades, the labour potential in Ukraine has suffered under a reduction in the economically active population and a worsening structural deformation in the labour market. Without immersing ourselves in the details of the State Statistics Committee’s data, it should be noted that in the period 2010–2017 the economically active population aged 15 to 70 years (taking into account the loss of temporarily occupied territory) was reduced to 17 854,4 thousand people (Key labour market indicators, 2010–2017). Structural deformation of the labour market resulted in a stable mismatch of supply and demand in the workforce that was formed under the impact of certain factors. A considerable portion of Ukraine’s

labour potential currently consists of employees that have no appropriate education and training and who do not see them as necessary assets.

Ukraine's labour market faces a shortage of workers in the areas of specialization that require a high professional level. Almost all Ukrainian enterprises are encountering this shortage, and this issue is being raised at all conferences, meetings, round-table discussions analyzing the situation in the labour market and in short-term and long-term forecasts. Foreign investors who invested in the construction of modern enterprises have already been hit by the shortage of qualified workers and now cannot find qualified staff to maintain such enterprises. Unfortunately, the State Statistics Committee of Ukraine, by its Order No. 221, dated 30 September 2015, abolished the form of the state statistic surveillance No. 6IIB, an annual "Report on the number of employees, qualitative composition and vocational education". We will therefore be able to show and substantiate major trends in education in the labour market up until 2014 only. Since that point, we believe that the situation has worsened. We will offer an analysis of the level of education, training, and retraining of the personnel, taking as an example the most labour-intensive industry – the mining-metallurgical complex of Ukraine (independent research of the Institute of Professional Qualifications). We selected the mining-metallurgical complex with good reason. Today, despite the steady reduction in the population, the mining-metallurgical complex remains the most labour-intensive and the most actively reconstructed and upgraded industry, requiring qualified employees at all levels of the production process. The demand for qualified employees spurred the development of new approaches to education and qualification upgrading in the industry itself as well as in the system of higher education and vocational training as a whole. The first industry councils for the development of professional standards were set up in the mining-metallurgical, coal, and energy sectors. The first professional standards and programs for vocational education and training based on them were developed in the mining-metallurgical complex. And they were implemented at the educational centers (academies, universities) organized at all large industrial enterprises in this sector (Metinvest, 2015).

Let us come back to the analysis of the situation. The number of employees in the mining-metallurgical complex of Ukraine gradually decreased due to various reasons (see Fig. 1, 2).

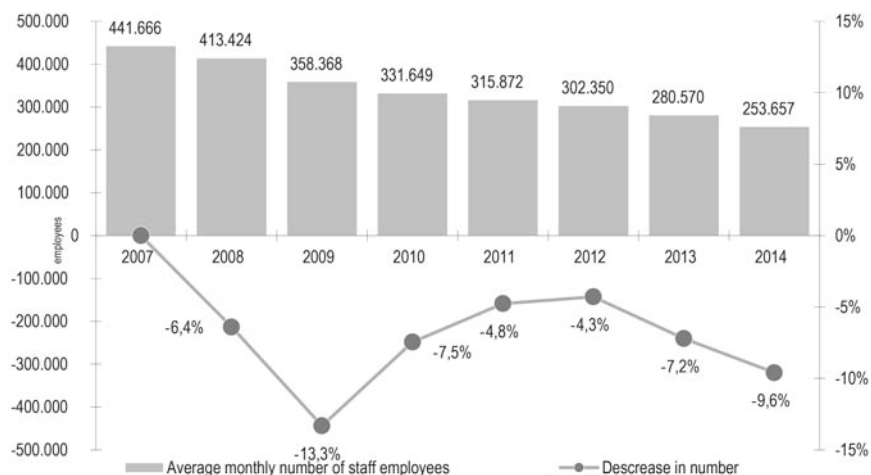


Figure 1: The number of employees in the mining-metallurgical complex of Ukraine (2007–2014) (Prytomanov, 2015, p. 2)

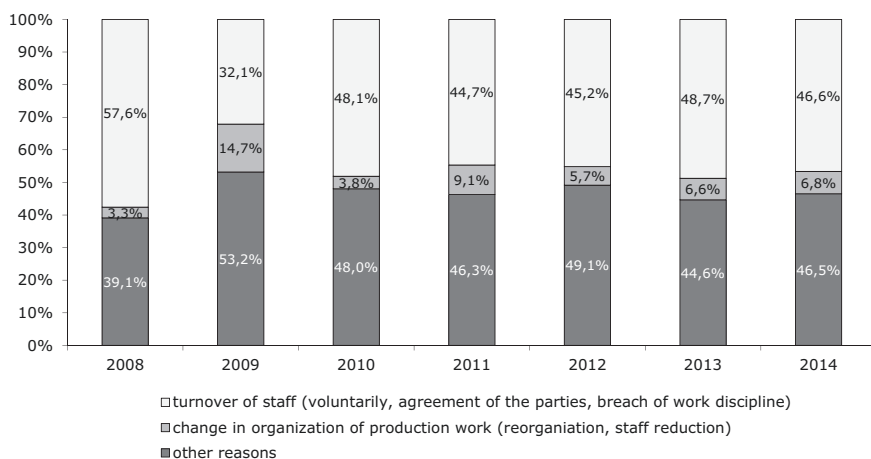


Figure 2: The share of the dismissed employees by reasons (own diagram based on Prytomanov, 2015)

In industry as a whole, the personnel decreased by almost one-half (42.6 %) (Prytomanov, 2015, p. 2). The workforce flow was as follows (see Fig. 3).

In other words, this was the process of personnel renewal, since 204,857 employees were recruited in seven years, making up 80.5 % of all persons employed at the end of December 2014 (Prytomanov, 2015). Meanwhile, the situation has stabilized and HR departments at enter-

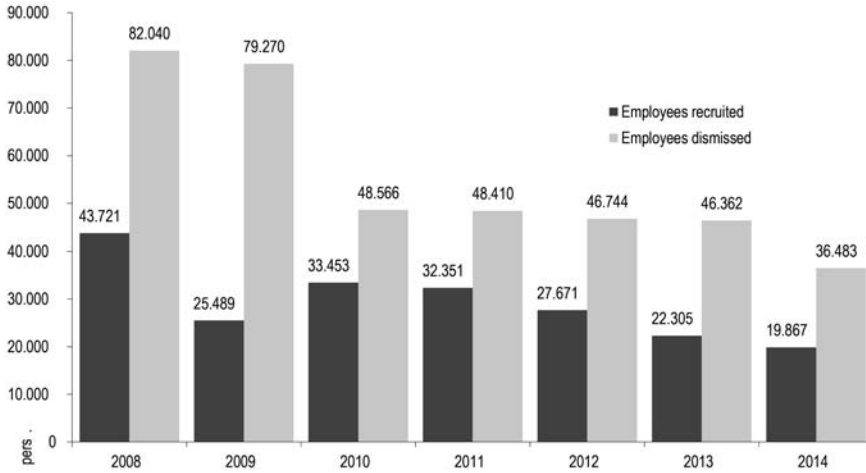


Figure 3: The workforce flow in the mining-metallurgical complex of Ukraine (2008–2014) (own diagram based on Prytomanov, 2015)

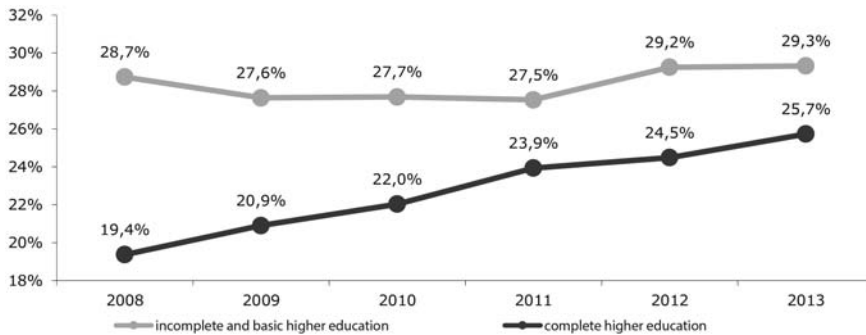


Figure 4: Dynamics of level of education of employees at the enterprises of the mining-metallurgical complex (Prytomanov, 2015, p. 3)

prises believe that the number of personnel is more or less adequate for the optimal demand indicators. No further significant leaps in the number of personnel are expected. The overall level of education of employees has been increasing steadily over these years (see Fig. 4).

Enterprises of the mining-metallurgical complex have always preferred to recruit persons with higher education in the first place, and this is even true of blue-collar positions that do not require such high qualifications. This phenomenon has become very common. Employers explain their desire to recruit employees with higher education to blue-collar positions by arguing that graduates of vocational technical educational

institutions are appropriate only for low-paid jobs that do not require high qualification. This trend has had a strong negative impact on the development of vocational training and the demand for vocational training among secondary schools graduates. At the same time, the quality of education at higher educational institutions is worsening as well. Let us consider what happens with the growth of professional qualifications of the employees working at enterprises.

According to our own research, based on the State Statistics Committee data, in 2014 the number of employees who had received advanced training in all industries of Ukraine made up only 9.4% of the registered number of staff members. It should be noted that the effective labour code and general agreement between the Cabinet of Ministers of Ukraine, all-Ukrainian associations of employers' organizations, and all-Ukrainian trade-unions and trade-union associations stipulates that obligatory improvement of employees' qualification be provided for not less than once every five years. Incidentally, this requirement is also applicable to teachers at all levels in Ukraine's system of education. This system of qualification upgrading certainly requires considerable financial resources, and not all sectors of industry are able and ready to allocate sufficient funds for it.

For the mining-metallurgical complex of Ukraine, the situation is as follows (see Fig. 5):

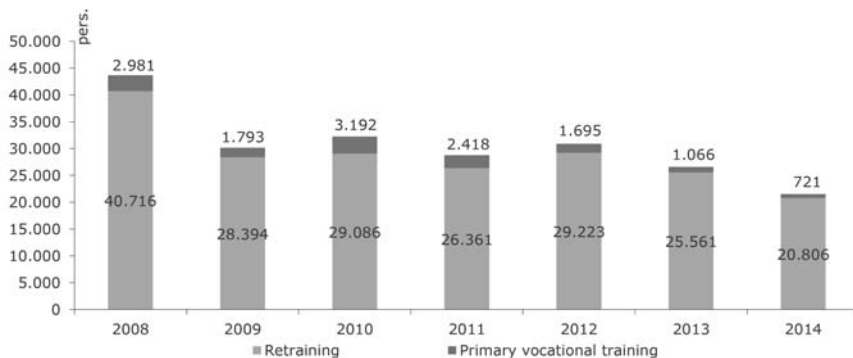


Figure 5: Number of employees trained and re-trained by enterprises of mining-metallurgical complex of Ukraine (2008–2014) (Prytomanov, 2015, p. 6)

In percentage terms, it is consistent with the general situation in Ukraine (see Fig. 6):

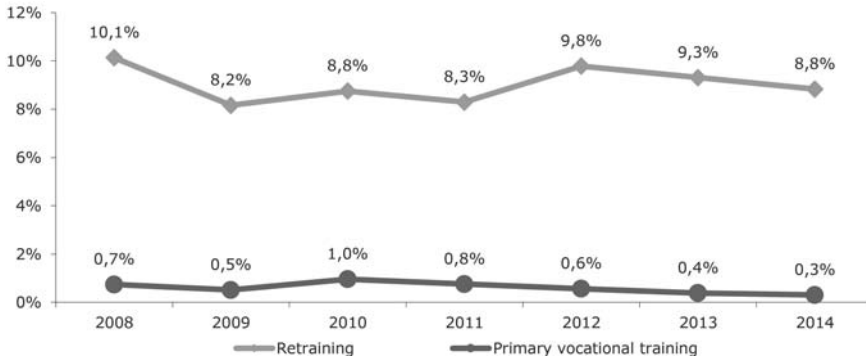


Figure 6: Vocational training of employees (of average listed number of employees) (Prytomanov, 2015, p. 6)

The situation with training and retraining in new occupations is still much worse. This is due, first of all, to the fact that the system of education is unprepared to respond to the demand of employers to train qualified specialists in new professions and in compliance with specific requirements of employers (see Fig. 7):

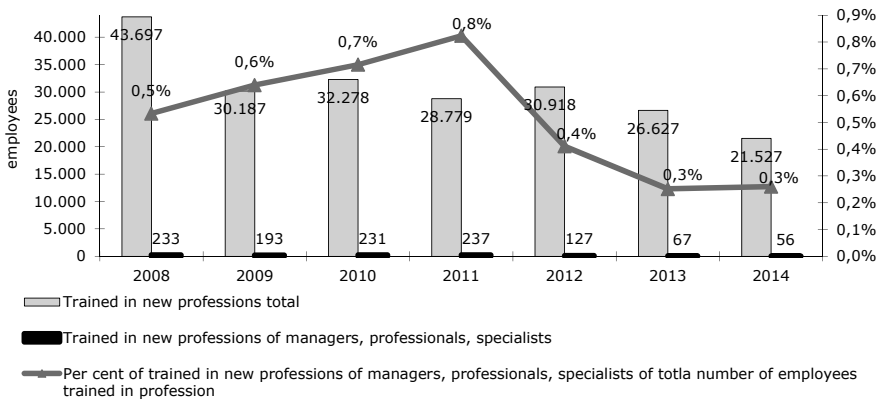


Figure 7: Number of employees (blue and white-collar) trained with new professions by enterprises of mining-metallurgical complex of Ukraine (2008–2014) (Prytomanov, 2015, p. 7)

As a result, the enterprises started setting up their own training centers on a massive scale. Today, according to the own data of Federation of Metallurgists of Ukraine, 80 enterprises of the mining-metallurgical complex of Ukraine have 16 of their own training centers (academies, institutes), where students are trained in more than 450 occupations.

The main forms of education under such conditions are individual and short-course work-based study (see Fig. 8):

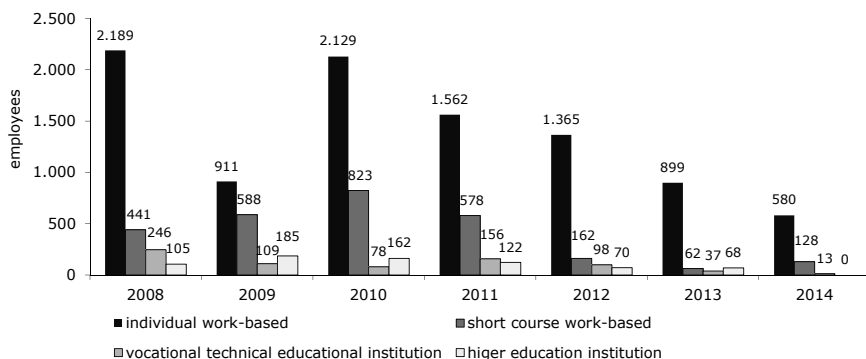


Figure 8: Vocational education of employees of the mining-metallurgical complex by forms of education (2008–2014) (Prytomanov, 2015, p. 9)

The situation in vocational retraining is similar but on a larger scale (see Fig. 9):

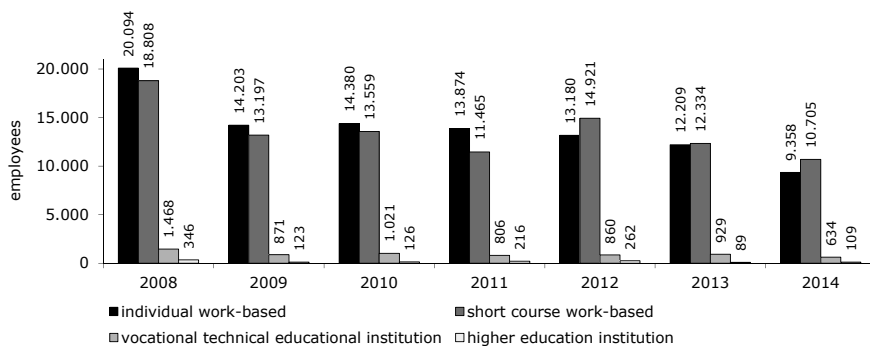


Figure 9: Retraining of employees of the mining-metallurgical complex by forms of education (2008–2014) (Prytomanov, 2015, p. 10)

In our opinion, the overall level of education and retraining in industrial sectors of the Ukrainian economy is approximately the same as in the mining-metallurgical complex of Ukraine. In 2015–2017, external labour migration from Ukraine reached 1,3 million citizens (State Statistics Service of Ukraine, 2017).

Labour migrants are usually among the most economically active persons. In the years 2015–2017, 66.8% of all labour migrants were

aged 25 to 49, 33.9% had completed technical and vocational education, and 30.1% had completed secondary education. Qualified Ukrainian specialists are often employed abroad not to practice their specialization but as unqualified workers. At the same time, the overall level of wages and salaries in the Ukrainian labour market does not allow domestic employers to retain qualified employees (Stat. Bulletin/State Statistics Service, 2017, p. 28).

The issues surrounding the growing outflow of qualified specialists from Ukraine were discussed during the round-table discussion “Future of the labour market in Ukraine”, organized and held on 19 March 2018 in Kiev by the Institute of Professional Qualifications in cooperation with the Ministry of Social Policy of Ukraine. Participants of the round table discussed the issues of the formation and preservation of the labour potential in consideration of the mass migration trend among Ukrainian citizens of working age, the disastrous shortage of personnel in many economic activities, and the necessity to introduce new forms and kinds of vocational training, in particular for the adult population. In particular, the participants were presented with the preliminary results of Project No. 574124-EPP-1-2016-1-DE-EPPKA2-CBHE-JP, “Improving teacher education for applied learning in the field of VET” (ITE-VET).

The system of vocational training cannot fully satisfy the existing demand for qualified specialists required for operating new, reconstructed, and modern industrial facilities. The low status of vocational education makes it difficult to attract investments from employers, a qualified pedagogical staff, and interested students. Training is usually carried out at obsolete facilities and with out-of-date materials, factors which are also partially responsible for the poor level of training.

The structure of professions and specializations around which vocational training is organized at the vocational training institutions does not meet the needs of the labour market.

Improving the quality of educational services and training of personnel will involve upgrading the material and technical resources of educational institutions, monitoring the quality of educational services and defining the future needs of employers by fields of operation, and popularizing blue-collar professions in the labour market.

There is currently an urgent need to reorient the system of vocational training to meet the needs of employers. This will involve upgrading the system of vocational training and aligning vocational technical educational institutions toward the demands of the regional labour market.

As a means of ensuring implementation of this set of objectives, the following tasks should be fulfilled:

- profound analysis of labour market needs in terms of qualified specialists and blue-collar workers in accordance with the demand for specific professions
- correspondence of workforce supply and demand for professions and specializations in the labour market
- creation of new jobs for qualified employees
- improvement of quality of educational and vocational training; broadening of the scope of training, retraining, and qualification enhancement of employees
- creation of modern systems of continuous work-based learning
- validation of non-formal learning
- introduction of the lifelong learning concept as a routine practice.

In 2018, a new project of the so-called electronic jobs record book will be launched in Ukraine due to the legislative amendments. Implementation of the project will allow us to obtain an accurate picture of the Ukrainian labour market as a whole and in certain regions (oblasts) online.

In recognition of the importance of detailed analysis of the labour market and the regional system of vocational training, the Institute of Professional Qualifications developed and launched the software package “Qualifications Map of Ukraine” (Institute of Professional Qualifications, 2017).

The Institute of Professional Qualifications has suggested using analytical information on the status of the regional labour markets (regional informational and logical model), which can be collected using big data technology. These datasets include indicators like the number of students at higher and vocational technical educational institutions and technical schools and colleges, the demand for qualified personnel by the main enterprises of a region, and a structural analysis of the population engaged in the economy of the region, among others. An example of a labour market analysis of one of the regions of Ukraine (Zhytomyr Region) can

be found on the website “Qualifications Map of Ukraine” (Institute of Professional Qualifications).

On the basis of the data obtained and depending on the interest of the regional authorities, we offer recommendations on how to coordinate the quantities and structure of qualified personnel trained to make the key enterprises of the region viable, thus reducing the possibility of over- and undersupply of personnel in a medium-term perspective. Full application of this algorithm and regular analysis of the data on the status of regional labour market development will enable authorities to adequately assess the level of labour resources and opportunities for balancing regional labour markets in a short- and medium-term perspective.

Below, we describe the significant changes that have been made to the regulatory framework in the system of higher education as well as vocational and technical education in Ukraine over the past four years.

3 Higher education reform, new learning outcomes-based approaches to education programs and curricula

Ukraine recognizes education as a priority area for the social and economic, spiritual and cultural development of the society. On 1 July 2014, the Verkhovna Rada of Ukraine (Parliament) adopted the Law of Ukraine “On Higher Education”. The law establishes basic legal, organizational, and financial grounds for higher education operation and sets conditions for enhancing cooperation of state bodies and businesses with higher education institutions on the basis of the principles of autonomy of higher education institutions and the combination of education, science, and industrial production with the goal of preparing competitive human capital for extensive technological and innovative development of the country, individual self-realization, and the needs of society, the labour market, and the state with regard to qualified personnel (Verkhovna Rada, Law of Ukraine on Higher Education, 2014).

The Law of Ukraine “On Higher Education” specifies the preparation of “competitive human capital for extensive technological and innovative development of the country, individual self-realization, and the needs of society, the labour market, and the state with regard to qualified personnel” as a key priority. In accordance with the law, the main principles of

the state policy on higher education include facilitating sustainable development of society by preparing competitive human capital and creating conditions for lifelong learning, promoting the accessibility of higher education, and integrating the higher education system of Ukraine into the European higher education area (Verkhovna Rada, Law of Ukraine on Higher Education, 2014, art. 30).

The main objective of the higher education reform is to ensure quality of education. Improvement of quality of education will stop the outflow of young people abroad. In particular, the Ministry of Education and Science of Ukraine, the central executive body responsible for shaping and implementing the state education policy, envisages several steps that will be necessary to improve the quality of higher education:

- Formation of a high-quality body of students at higher educational institutions using tools that have proven effective in the past and can still be improved (enrolment based on external independent assessment, unified professional initial testing, target-based allocation of the state order, large-scale competition, competitive allocation of the state order for master's level education)
- Modern content of education; first of all, new competency-based standards and modern education programs. To date, about 200 draft standards have been drawn for bachelor's and master's programs, and standards for doctors of philosophy (educational part) and junior bachelors (if necessary) are expected to be developed in 2018. The current problem is related to the introduction of higher education standards, as the National Quality Assurance Agency in Higher Education, which is participating in the development of such standards, is not operating since last year
- Improvement of the functioning of internal and external quality assurance systems in education
- Implementation of new models for training specialists. This means reforming training in regulated professions – medical, legal, and pedagogical education –, starting to train specialists according to the scheme “junior bachelor, master,” and introducing external independent assessment as a prerequisite for entering master's programs for certain specializations
- Introduction of academic attestation. It is planned to allocate basic

financing for scientific research at higher education institutions on the basis of such attestation. Quality control in education is being transferred to the non-ministerial organization National Quality Assurance Agency in Higher Education. The purpose of setting up this agency and transferring certain functions to it is to provide independent supervision and regulation of educational processes. As this institution is non-ministerial, it is presumed that the risks of bias and corruption in the rating of higher education institutions will be considerably reduced. The regulatory functions of the institution include accreditation of educational programs, the procedure of awarding academic degrees and setting the requirements for them, and control over academic boards (Verkhovna Rada, Law of Ukraine on Higher Education, 2014, art. 6, 18).

On 29 April 2015, the “list of the fields of study and specializations for the training of higher education learners” was approved (Cabinet of Ministers of Ukraine, On Approval of the List of Fields of Knowledge and Specialties under which Higher Education is Provided, 2015). This reform provides for the consolidation and generalization of specializations and the merger of several small specializations into a single broader one. In other words, the specializations have become much less numerous. This allows students to become more mobile and gives them more opportunities to change their learning path and move to a neighbouring field. They are better ensured against unemployment in case of any changes in the labour market situation. Previously, when the demand for specific fields of study unexpectedly decreased, graduates of these fields faced serious challenges on the labour market and had to undergo a full retraining. The unification of specializations with a narrow focus, from our point of view, would enable holders of bachelor degrees to obtain a specialization including an extended set of competencies.

The reform stipulates that students should be able to independently choose no less than 25 % of their course units. To ensure this, a consolidation of specializations is also required. Students select a broad specialization upon entering the institution, for example “international relations,” and can choose exactly what they want to study later on depending on their preferences and capabilities – either international economy, inter-

national law, or international business. In addition, master's candidates will be offered still narrower specializations.

The process of developing higher education standards has also changed considerably. The higher education standards define the following requirements for degree programs:

- 1) amount of ECTS credits required to achieve the relevant higher education level
- 2) list of competencies graduates should possess
- 3) normative content of training for higher education learners, formulated in terms of learning outcome
- 4) forms of attestation for higher education learners
- 5) requirements concerning the availability of an internal quality assurance system for higher education
- 6) requirements concerning professional standards (if available) (Verkhovna Rada, Law of Ukraine on Higher Education, 2014, art. 10).

The new higher education standards are standards of the next generation and supersede sectoral higher education standards (SHES) developed in 2002–2004. The new standards are based on the competency approach and implement the concept of defining requirements to a specialist that was the basis of the Bologna Process and of the international European Commission project “Tuning Educational Structures in Europe” (González/Wagenaar, 2003, p. 3).

The priority task in implementing the competency approach is personal growth through participation in projects, training courses, and leadership training. Hence, the two main tasks of changes in the organization of the educational process are developing the personality of the teacher and teaching students' skills to foster their personal growth. This involves a considerable change in the basics of teaching through implementation of training and other communicative forms of practical work (Vnukova/Pyvovarov, 2017, p. 378).

4 New concept of vocational education development

Today, the reform of vocational education and training is becoming an actual test for the country in terms of investments in the development of

its future economy. Over fifteen years, vocational education and training remained uncoordinated with the main macroeconomic indicators of the country's development. It persistently lagged behind not only in GDP development but also with regard to industry and agriculture, and that had a negative impact on the economic activity of the state and certain sectors of economy. According to V. Novikov, the country's GDP index was 1.43 in the years 2000–2015, that of industry was 1.58 and agriculture 1.27, while the vocational education indicators showed negative dynamics (Novikov, 2017, p. 129). The reduction rate of vocational technical educational institutions over the same period was 0.82, that of graduates 0.62. Such dynamics of vocational education and training is explained by its mismatch with labour market demand and the educational needs of young people (Vnukova/Pyvovarov, 2017, p. 380).

Ukrainian experts and politicians have been discussing opportunities for upgrading vocational education and training and adapting it to the labour market for many years now. However, the issue remains unresolved. Incompleteness of reforms is the reason why the entire system of vocational education and training has long had an undetermined status in terms of its structure, didactic programs, management, and financing. The search for a balance between the purposes of the state, the capabilities of vocational technical educational institutions, and the interest of employers in providing the labour market with qualified personnel remain the urgent issues. What is required to resolve these issues is a modernization of the educational system, systematic forecasts of demand for occupations and specializations, the enhancement of organizational forms, and increased financing of the public system of vocational technical educational institutions.

The success of the reform depends on defining and implementing priorities for the development of vocational education and training aimed at positive changes based on didactic, economic organizational, and social innovations that enhance practices of training competitive specialists. In particular, in view of the reflections above the “Green Book” document was presented on 6 December 2016 under the title “Decentralization of Vocational Education and Training in Ukraine. Urge to Act” (ETF, 2016). The “Green Book” was developed with the support of the European Training Foundation. The project was amply discussed by the stakeholders and provided for four main directions of action that, when

implemented, would have to form the foundation of the renewed system of vocational education and training in Ukraine:

- 1) efficient multilevel management with participation of all stakeholders
- 2) state financing and support derived from the efficiency of the system
- 3) continuous active influence from employers
- 4) equal respect to vocational and secondary education (ETF, 2016, p. 8).

Considering the proposals provided in the “Green Book”, the Ministry of Education and Science of Ukraine has developed the conceptual framework for vocational education reform “Modern Vocational Education”, which is now under discussion in the expert community. The objective of the conceptual framework is to clarify the philosophy of changes in vocational education and training and define a consolidated purpose, tasks, and ways of development and key components of modern vocational education. In accordance with the said document, the issues to be resolved are:

- lack of regulation of the share of responsibilities in management and financing of vocational education development
- insufficient level of management culture of senior officers of executive authorities, self-government bodies, and educational institutions in the matters of vocational education and training (VET)
- lack of incentives for development of social partnership
- inconsistencies in the quality and fields of vocational training; the level of qualification of VET learners is not aligned with labour market demands and individual needs
- low prestige of blue-collar jobs and vocational qualifications (Ministry of education and science, 2018, p. 3).

In accordance with the conceptual framework, the components of a modern vocational education are:

- decentralization of management and financing of vocational education and training
- social partnerships in vocational education and training and the labour market
- quality of vocational education and training (Ministry of education and science, 2018, p. 4).

It should be additionally noted that social partnerships in vocational education depend directly on the quality of vocational education. The authors of the conceptual framework believe that quality vocational education, in particular, requires:

- development of occupational standards corresponding to the demand of the labour market and personal needs of VET learners
- availability of flexible and mobile paths for acquiring vocational qualifications through validation of non-formal and informal learning, implementation of full and partial qualifications, introduction of individual forms of acquiring vocational education, including dual education, etc.
- formation of a single education area, ensuring opportunities of continuous obtaining of professional qualifications, lifelong learning, a combination of work-based learning and learning at vocational and higher education institutions of all types and forms of subordination, and recognition of professional qualifications.

Thus, we can state that currently in Ukraine, there is a need for improving the quality of regulatory and organizational paradigms of vocational education and training, beginning with the development of the concept followed by a new Ukrainian law on vocational education (as vocational education and training in Ukraine is still governed by the law of 1988) and ending with a dramatic change in the management of vocational education and training at the local level and the establishment of innovative centers of excellence that would combine advanced methods and forms of education and training. To this end, it is planned to submit the new Law of Ukraine “On Vocational (Vocational Technical) Education and Training in Ukraine” to the Verkhovna Rada (Parliament) of Ukraine by the end of 2018. We can expect with a certain degree of optimism that issues that are critical for the sustainable development of vocational education and training in Ukraine will be resolved in 2018.

5 The law of Ukraine “On Education” and new opportunities for vocational qualification development

Since Ukraine gained independence in 1991, the legislation on education has provided practically no correlation between the system of education and the labour market. Even the effective Law of Ukraine “On Vocational Technical Education” (1998) has a relatively small number of provisions on systemic relations between the educational system and the labour market (except for some provisions on participation of employers in certain forms of knowledge control, training education practice, etc.). Until recently, the employers have had no considerable impact on the content of education and had to take specialists after graduation with not sufficient level of skills and knowledge, because the content of education was beyond their control.

The adoption of the Law of Ukraine “On Education”, which contains norms for combining the requirements of the labour market with possibilities of education in defining qualification requirements for specialists, was the culmination of the long-term preparation process that created the foundation for productive cooperation of the labour and education fields. Such cooperation commenced in 2011 with the adoption of the National Target Program on Development of Vocational Technical Education in 2011–2015, which, in particular, provided for the development of 300 state VET standards on specific occupations with involvement of social partners (Cabinet of Ministers of Ukraine, “On Approval of the State Target Program on Development of Vocational Education for 2011–2015”).

In practice, this meant that each draft of any state VET standard, before being approved by the Minister of Education and Science, was presented to associations of employers’ organizations and trade unions to clarify to what extent competencies and learning outcomes met the expectations of employers for the future specialist. In the years that the program has been in operation, over 300 draft VET standards have been prepared. The other consequence was that the employers realized a real possibility to influence the content of the specialist training that made their involvement in the process very attractive.

The next stage in bringing the positions of employers and educators closer to each other was the regulation defined in the resolution of the

Cabinet of Ministers of Ukraine “On approval of the procedure for the development, approval, and amendment of sectoral standards for higher education”, under which drafts of educational qualification characteristics of graduates of higher educational institutions were to be agreed upon by the Ministry of Social Policy of Ukraine and the joint representative body of organizations of employers and their associations (Cabinet of Ministers of Ukraine, 2012). Implementation of this provision drew serious opposition from the representatives of higher education, who had to agree upon learning outcomes and qualification aspects of their students’ training with the representative body of employers. During the period when this resolution was effective, the employers overviewed over 300 draft higher education standards and made proposals on changes and additions to more than 180 of them. Apart from the results related to optimization of the content of training and the updating of qualification requirements for the students of higher education institutions, the said work identified stakeholders on the labour market who were ready to assume responsibility for radical changes in legislation on education in 2014–2017.

The Law of Ukraine “On Education” (2017, Art. 34) has a separate article on educational and professional qualifications, thus establishing a close relationship between the labour market and education in the area of identifying competencies of future specialists and related qualification requirements. In particular, the terms “qualification,” “competence,” and “learning outcome” were clearly defined in the article of the law on the definition of terms. Article 4 of the law contains a definition of the dichotomy of qualifications (educational and professional), outlines opportunities for obtaining and recognizing qualifications irrespective of the place of their initial awarding, defines the levels of the national qualifications framework, etc. The law also envisages additional special laws regulating the formation and operation of the national qualifications system as a totality of institutions and legal norms regulating processes concerning the definition of educational and/or professional requirements to persons in accordance with the needs of society and the labour market, including assessment of their qualification level (Art. 37). A special place in the law was given to the National Qualifications Agency, a regular operating collegial body authorized to implement the

national policy on qualifications that is to be created on the principles of representation of social partners (Art. 38).

The above description of the Law of Ukraine “On Education” allows us to draw the conclusion that Ukrainian legislation on education, in particular higher education, is fostering systemic and constructive relations between education and the labour market, not only at the level of agreeing upon qualification requirements and learning outcomes but also at the institutional level in that authorized representatives of the educational system and the labour market are being vested with the authority to enhance the training system of specialists to meet the needs of the national economy.

6 Attitudes of employers toward the reforms in education in the context of supplying the market with qualified specialists

The attitude of employers toward reforms in higher education has remained unchanged in recent decades. In the following, we will use the term “employer” in its general sense, either as a private or as a public institution but not as a separate enterprise or establishment. The employer is an end customer of the services rendered by the educational system. It is the employer that pays for such services through the system of taxes and duties, and in some cases directly. From the employer’s point of view, it is very important to reach an understanding that education should be adapted to labour market requirements and not vice versa. In other words, employers need to be sure that the objective of education is not to achieve an abstract increase in a person’s intellectual and spiritual capacities but to prepare him/her for successful entrance to the labour market and to create the necessary prerequisites for his/her further competitiveness on this market.

The labour market needs qualified specialists with a level of relevant education and training that corresponds to the needs of employers regarding certain competencies. The perennial question is only how this relationship between the labour market and education can be strengthened. How is it possible to find a common language understood by both parties?

For more than six years, certain efforts have been made, first of all by representatives of private businesses, to establish special institutions – sectoral councils – for developing standards and strategies of professional qualifications development. At the time of writing this article, six councils were already operating in Ukraine (Institute of Professional Qualifications, 2018). Although the main role in these councils is played by the representatives of employers, they also include representatives of the leading higher education institutions in the country by relevant specialization, of the Academy of Pedagogical Sciences of Ukraine, and sometimes of trade unions. It is not easy to keep the dialogue going, but significant progress in the search for mutual understanding is still visible, in particular regarding the cooperation between employers and universities under the current project.

To remain in dialogue, both parties need to learn a new “language”, that is, the “language” of occupational standards, learning outcomes, vocational qualifications, and educational programs for attaining them.

From the employers’ point of view, Ukraine needs to establish a system of professional qualifications. Without such professional qualifications, all reforms in the systems of higher education and vocational education and training will remain inefficient and will not produce the desired effects. The system of professional (vocational) qualifications should include the following concepts and documents:

- occupational standards
- learning outcomes and assessment tools
- partial and full professional (vocational) qualifications
- educational standards
- educational programs and curricula.

The system of professional qualifications should include the following special institutions:

- special state body – the National Qualifications Agency
- bodies accredited for the development of occupational standards
- bodies accredited for the development of professional qualifications
- centers for independent assessment of professional (vocational) qualifications
- generally accessible registers of the developers of occupational standards and occupational standards themselves

- register of the developers of professional (vocational) qualifications and professional (vocational) qualifications themselves.

Some of these bodies are already foreseen by the Law of Ukraine “On Education.” The others should be described in the future law on the system of professional qualifications.

Let us now consider some of these elements in terms of their importance for employers.

Occupational standards

For the employer, an occupational standard is the first and the most critical element developed by the employer himself or according to his instructions and under his control. What do we mean by occupational standard, and what role do we want it to play when implemented in the educational system?

All types of economic activities in all countries, including Ukraine, are classified in a certain way. The classifier of the types of economic activity (KVED) is a state standard, and each enterprise is classified according to a particular code (usually several, one main, and additional) of the economic activity. Every type of economic activity contains a description (with different details) of technological processes that result in achieving the goal of such activity – production of certain products and/or the rendering certain services. The description of such technological processes in the aspect of the necessity of performing certain working functions to attain the goal of that activity is called “functional analysis.” Functional analysis is not a method of analyzing an occupation in the common sense of the word.

After the key occupational duties have been defined by means of functional analysis, they may be further divided into sub-functions until the results for each key function have been defined. A standardized job description expressed in terms of competencies (knowledge, abilities, and skills) is called an occupational standard. There are various regulatory definitions of occupational standards, but the notion remains as above (Law of Ukraine “On Education”, Art. 39).

The functional analysis method requires extensive consulting activity from the employers. This is why, in our opinion, special institutions

should be set up by employers – sectoral councils for the development of occupational standards. To ensure quality of the developed occupational standards, the sectoral councils for the development of occupational standards have to undergo accreditation at the National Qualifications Agency to act as an independent collegial body. The same body should conduct validation of occupational standards developed by the employers on the compliance with the procedure of their development and common quality requirements. The national occupational standards should be approved by an authorized state body and registered in a special publicly accessible register of occupational standards. Currently this register is maintained by the Institute of Professional Qualifications and is called the Repository of Professional Qualifications (Institute of Professional Qualifications, 2015).

The developers of occupational standards naturally also need to be trained themselves. Members of the sectoral councils and working groups for the development of occupational standards should be trained for their respective functions and acquire the necessary additional qualifications to develop high-quality occupational standards.

The objective of the higher education system in relation to this element is to develop relevant educational programs and curricula and to create opportunities for obtaining partial qualifications in the field of occupational standards development. Occupational standards and the main areas of their application have been defined in the regulatory framework of Ukraine, but the experience gained should also be systematized in the draft law “On the System of Professional Qualifications”.

Learning outcomes

When developing an occupational standard, the employer describes the competencies needed for the employee to perform the required occupational duties. These competencies directly depend on the requirements of the labour market and are determined by the market. After formulating these competencies (thus developing an occupational standard), the employer has completed his/her main task and answered the question of the educational system – that of what kind of specialist is needed. Now it is the task of the system of education to formulate the qualifications to be obtained and express them in terms of learning outcomes. Learn-

ing outcomes are a description of what a student is supposed to know, understand, and be able to do after the learning is completed (Law of Ukraine “On Education”, Art. 1).

The principle position of employers is that learning outcomes should be measurable. Use of learning outcomes will enable the system of education to develop educational programs that:

- are understandable for employers as well as for students
- allow students to acquire knowledge, abilities, and skills that enable them to find jobs after their training is completed
- are appropriate for teaching, training, and assessment at any time, in any place, and in any way
- are quite flexible and adaptable to the labour market requirements.

The reform of education in Ukraine, following global trends, is thus in general aimed at defining professional qualifications by means of learning outcomes, as the latter allow the labour market (employer) to determine the real content of one or the other qualification. Moreover, but not less importantly, defining qualification in terms of learning outcomes allows one to implement various lifelong learning paths (either formal or non-formal). It is very important for employers that the learning outcomes be formulated on the basis of the competencies required to carry out certain occupational duties at a place of work, not on the basis of components of educational programs. However, the development of learning outcomes is not just a process of using competencies in specific occupational standards. There is also a separate process of formulating the necessary broader knowledge, abilities, and skills with the obligatory participation of the interested employers.

In our view, this requirement is currently not being met. New standards of higher education contain the whole sections of the “list of competencies of a graduate” and “normative content of training of a candidate for higher education level formulated in terms of learning outcomes.” The standards are developed by specialized scientific methodology commissions set up by the order of the Ministry of Education and Science of Ukraine. However, these commissions include neither representatives of employers’ organizations nor already existing sectoral councils, who could advise academics on which competencies (general and specific) are required in the labour market. And the process of

defining learning outcomes and their assessment tools is as important as the ability to correctly formulate them.

We are ready to state that the general tendency of educational reforms in this part is absolutely correct. However, its implementation in practice encounters serious obstacles. The basic idea is to refuse form-defining qualification based on the duration of the educational programs and to shift to the formulation of educational standards and programs in terms of learning outcomes and competencies. And this idea should have a strong hold on the minds of teachers at all levels. Naturally, this requires serious personal and public efforts within the system of education as well as significant financial investments related to the targeted upgrading of qualification of the teachers in this area. It is difficult for us to estimate the possible amount of such costs, but it is obvious that without such costs no reform of higher education and vocational education and training will be successful.

Let us consider the current project. At the time of writing this article (mid May 2018), after a year and a half of active implementation of this project, it is still unclear what changes in the competencies of students at three Ukrainian universities are to be made as a result of the revision of their curricula (of the changes in the number of hours and the list of the subjects studied). Revision of curricula has been carried out mostly on the basis of the professional experience of teachers concerning what might be valuable for students and in what amount. Significant part of this problem lays on employers who do not always participate in the teacher education processes by, for example, internships. We hope that because of the project teacher education would become more relevant to demands of the labour market and employers would find beneficiary and effective participate in such education. Extensive efforts at clarification should be made at the state level to ensure that all stakeholders correctly understand their place and tasks within the system of professional qualifications for the labour market.

Assessment tools

Along with the learning outcomes, assessment tools for achieving such outcomes as well as assessment standards have to be developed. Regard-

less of where and how qualifications were obtained (at a public or private educational institution, through work-based learning, or by self-learning) the requirements for validation of qualifications should be based on the same assessment standards. This approach is beneficial to all parties involved in the process: students, employers, and the educational system.

Employers should have free access to the detailed description of assessment procedures and their requirements for each awarded professional qualification. As these requirements differ for each qualification or group of qualifications, assessment standards should be adapted to them. And this is impossible to do without close cooperation with the leading specialists in the sectors. The task of the employers is to create interaction mechanisms between the educational system and industry sectors. In our opinion, sectoral councils or professional organizations may serve as such mechanisms. Examples of such cooperation in the development of assessment standards and the use of standardized assessment procedures are well known in private business, in relation, for example, to obtaining international certificates in the fields of finance, accounting, the IT industry, and the activities of attorneys or auditors.

For the public education system, however, these approaches are totally new. We did not find any description of standards or procedures of validation of the achieved learning outcomes on the websites of the universities participating in the project.

One more important question for the labour market is who is to conduct assessment and appoint assessment experts. The principle position of the employers is that the educational system (in its common form) cannot and should not assess outcomes of the educational services it provides. There should be those who teach in accordance with the educational standards and those who should assess the results achieved during education in compliance with the assessment standards. Without this there will never be any trust in the qualifications awarded by the system of education. Moreover, employers will have to – as they do today – spend additional and substantial amounts of their own resources to assess knowledge, abilities, and skills when a person enters the labour market. Therefore, it is a specific task to provide professional training of assessors. The assessment procedure is a specific occupational function that should be described as an occupational standard on which basis

learning outcomes and assessment tools will be developed and partial qualification and educational programs for their achievement prepared. The Institute of Professional Qualifications sees its mission and its objective in the development of just such documents and in the launching of a program for the training of independent assessors (independent of the system of education). Certainly, the development of the system of independent assessment and validation of qualifications requires extensive financial investments, as would any other reform of the system of training qualified specialists.

Educational programs and change in approaches to learning

Reforms in the system of education, in our opinion, are without doubt aimed at a shift from the “educational program – qualification” paradigm to the “occupational standard – professional qualification – educational program” paradigm. This approach requires new multiple solutions and broad involvement of all interested parties, first of all to develop effective regulatory documents. We realize and promote in many ways the idea that the development of educational programs based on learning outcomes should take into account not only competencies related to specific occupational duties but also learning outcomes related to general skills and educational objectives. The set of basic and obligatory learning outcomes may vary for various educational programs, but we find it important that recommended and specific learning outcomes were based on competencies related to and determined by the labour market.

There is no doubt that the major part of the educational programs taught has to be developed at the level of the educational institutions themselves. An educational institution should have extensive autonomy regarding the development of particular educational programs as well as the definition of components of their development process and implementation. This process requires highly competent personnel at the educational institution who are capable of independently defining the methodology of teaching and adapting the content of educational programs to the requirements of the labour market. And such competent personnel is without any doubt available at the educational institutions in Ukraine.

Another issue is that the process of development itself should be transparent and available to all stakeholders (educational institutions,

employers, and students). Educational institutions indeed have to adapt their educational programs to the requirements of the labour market simply in order to survive. Transfer to the system of “money follows a student” in Ukraine in several years may result in (and is already leading to) the disappearance of not only certain chairs and faculties but entire educational institutions.

7 Conclusion

It is obvious that the system of education in Ukraine is in a period of transition. There are several factors that make this process more difficult and sometimes painful for certain stakeholders:

- the large amount of both higher and vocational education providers, all of which are competing for a group of students (learners) that is becoming smaller and smaller against the background of the demographic decrease and aging of the population of Ukraine
- the visa-free regime with the EU, which has already led to a great brain drain to the nearest neighbours of Ukraine (Poland, Czech Republic, Germany)
- the weakness of the teaching staff and the old-fashioned material base of many vocational and higher education providers.

All of these factors are leading to a general decrease in the quality level of education in Ukraine that impacts Ukrainian employers as well.

There several general concerns that employers have when they enter into discussions about education in Ukraine, its relevance to employer's needs, and the readiness of the educational providers to cooperate with employers to improve quality of education:

- Educational providers do not consider the needs of the enterprises when they design the teaching plan and plan the work placements and practice. That makes these parts of the educational process uninteresting for employers. In general, even if the work placements and practice are really conducted at the enterprise, they are in most cases quite formal and not oriented toward the acquisition of necessary skills and competencies.

- The needs of employers are not considered when the program and teaching plan are designed. Only in the past few years have there been success stories in which employers really included their needs in the programs through occupational standards.
- The general level of knowledge of the newcomers to the labour market is very low; yesterday's graduates do not know basic disciplines, a significant part of which is learned at school. This leads us to the question of the relevance of the knowledge and competencies for lifelong learning included in school curricula.
- In many cases, newcomers to the labour market have insufficient motivation to work and improve their skills and knowledge to be more competitive on the labour market throughout their working life.

Several positive factors that influence employers in their perception of the educational reforms are worthy of mention:

- flexibility of higher education providers in the adaptation of the educational programs (because of the autonomy of higher education system)
- attempts to introduce the elements of the dual system, either in the vocational sphere or in higher education
- further development of occupational standards (mostly in the sphere of VET) and the design of competency-based educational standards.

Therefore, the reforms continue to be implemented, and we assume that business is not yet fully participating in them. There is still a lack of confidence and trust on both sides, but success stories of mutually beneficial cooperation give us hope that business and the educational sphere will ultimately become partners in the process of transforming the educational sphere of Ukraine.

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