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Improving teacher education for applied learning in the field of VET

WAXMANN

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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. 514 ff.). 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. 124 f.) 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. 89 ff.; 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. 28 f.), 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. 514 ff.). 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* become 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. 523 f.). 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

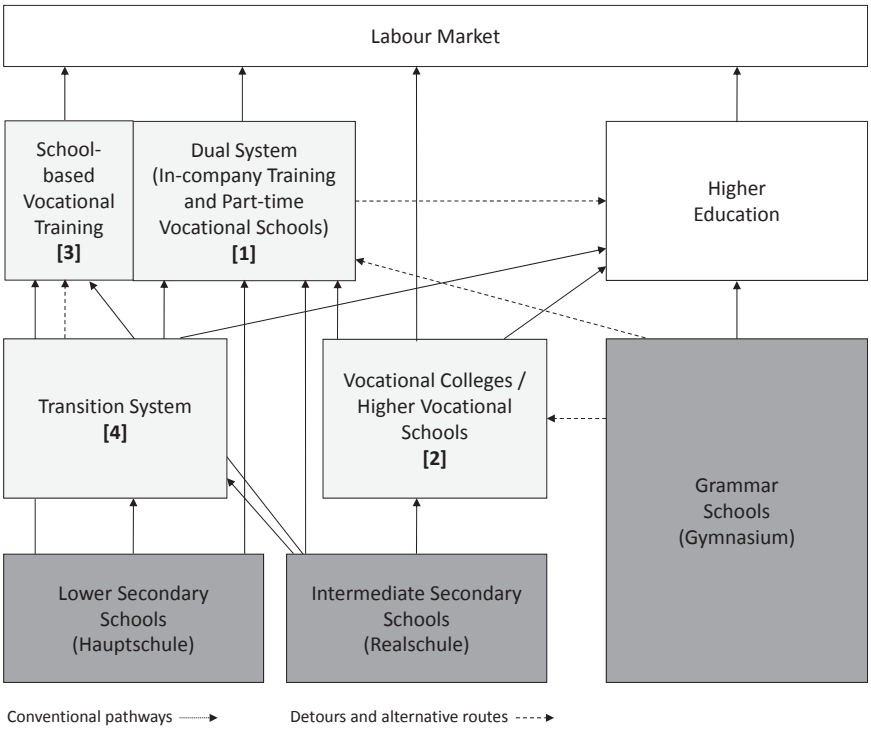

Figure 1: The German education system (revised figure based on Deissinger/Smith/Pickersgill, 2006, p. 39)

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. 448 ff.). 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. 449 ff.). 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. 364 ff.; 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/Spoettl, 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).

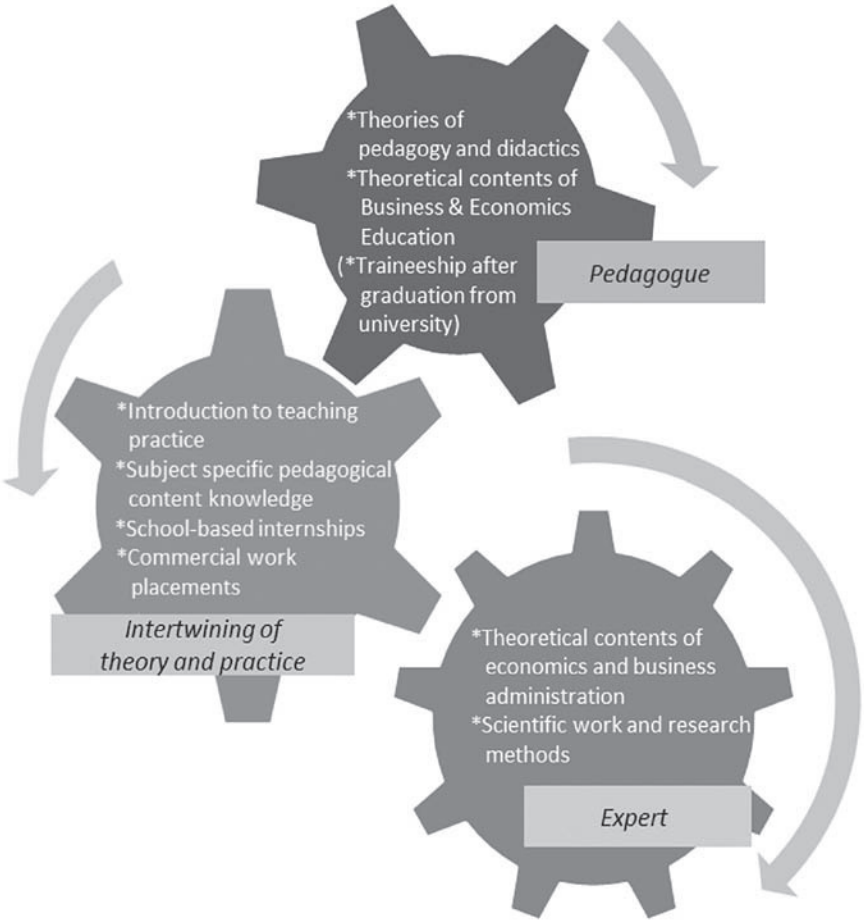

Figure 2: Managing the two fields of conflict 1. training *experts and pedagogues* and 2. *theory and practice* in the Business and Economics Education degree programme at the University of Konstanz

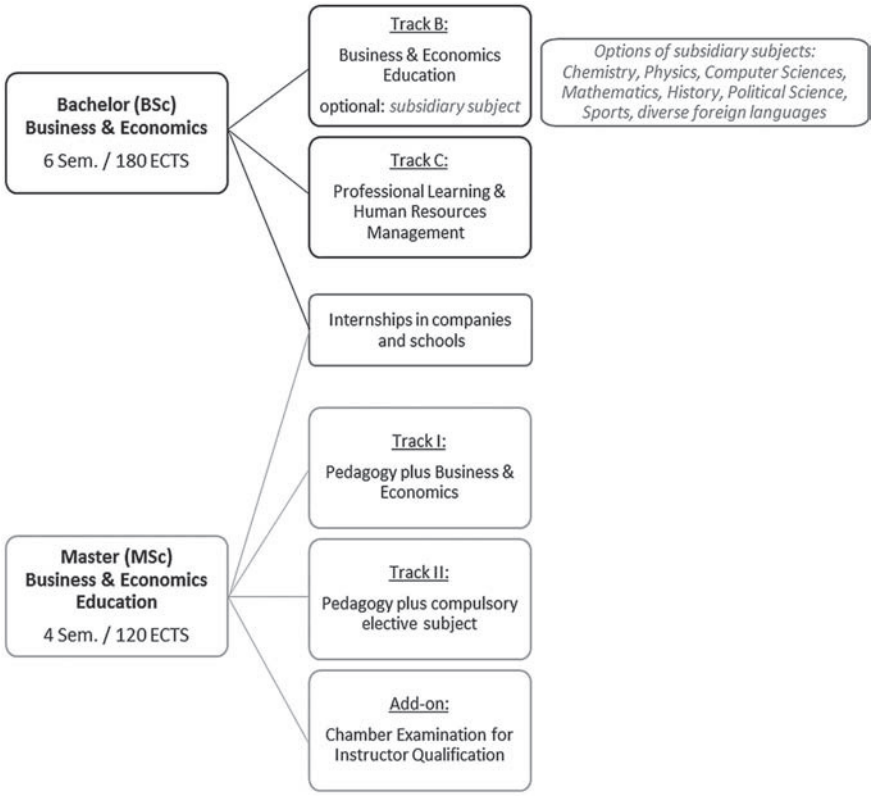

Figure 3: Business and Economics Education degree programme at the University of Konstanz

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. 16 ff.).

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 (Khmelnitsky 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).

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