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**“From technical educators to vocational teachers” II
Training after the Bologna system**

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Abstract

The theoretical work presented in the present study strives to limit itself to the historical and curricular aspects of the training of technical instructors. Technical teacher training, which serves the preparation of practical instructors in vocational secondary schools is specific in many respects. A review of the training of practical instructors can be organised along 6 main central points within the technical teacher training. The most important aspect of the analysis was the examination of training content, training structure and professional-pedagogical ratios based on curriculum frameworks. In addition, it is essential to determine that this training was created in order to meet which vocational training needs and which were the problematic points that served the further development. The training of technical instructors is being done in very few institutions currently, besides the training places, the number of students is also small. One of the main objectives of the theoretical analysis is to outline possible solutions and paths for the future and possible directions of the training, in addition to exploring the problems.

Keywords: vocational instructor; Technical instructor; technical teacher training

1. Introduction

Both previously and in the current opinion of higher education institutions interested in vocational teacher training, the training of vocational teachers has different capabilities and peculiarities from other teacher training branches. The training of vocational is a well-circumscribable branch of training within teacher training, in its function.

Within teacher training as a whole, vocational teacher training is diverse, but in its diversity there are common features that strengthen unity in their diversity. Despite its diverse orientation and varied training structure, it is an independent subsystem (Rádli, 2011).

Technical teachers as vocational educators have a dual attachment. They have a technical qualification which can be used independently (university or college, i.e. MSc or BSc, or, in the case of vocational instructors, an OKJ vocational qualification is a condition for obtaining the qualification of a vocational instructor) and, at the same time or after, students obtain their

qualification as teachers (engineer-teacher, formerly technical teacher or technical instructor). (Vásárhelyi, 1985) (OKJ: National List of Qualifications).

A basic requirement for vocational instructors is a high level of theoretical and practical knowledge of the profession. They also need to be aware of the subject structure of the profession. It is essential that they have regular and live contact with the establishments, SMEs and training places which enrol students for the professions they teach, using modern technology within the trade (Kovács, 1985). The function of the training of vocational instructors and the competences given by qualifications have been / are significantly influenced by changes in school vocational practices and external traineeships organized in workplaces (Rádli, 2011).

2. Evolution of the training of vocational instructors following the Bologna system

While our study published in the previous issue of the journal sought to reveal the first major development curve of the training of vocational instructors / practical instructors teaching practical subjects within the group of technical teachers before the Bologna system, the present study seeks to demonstrate the changes occurred under the influence of the Bologna system and the current state of the career of the degree trainings.

We would like to recall the history of the training of vocational instructors with the diagram below (Fig. 1.).

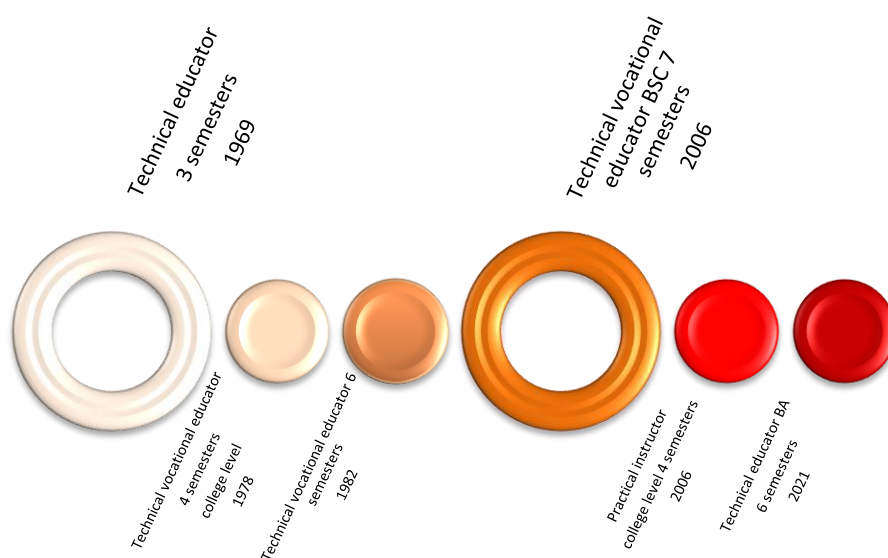


Fig. 1: Milestones in the evolution of the majors technical educator – technical vocational educator

It seems that the beginning of the training, the transition and the running-up of the degree to college level and the transformation of the new milestone due to the Bologna process have already been presented, and the declining career as a result of it, as well as the problems of training and the potential of the training are being flashed in our present analysis.

2.1. FSZ-type training of practical instructors

The traditional training scheme of technical instructors continued to take place only in correspondence form between 2002 and 2007. Schooling was possible from a wide range of professional areas. The renewal of the degree course would have been possible in the framework of tertiary-level vocational training (FSZ) from the following academic year, after the start of the "Practical Instructor" training was approved and the institutes providing teacher training prepared the application, documents and programmes to be submitted to the Board of Education. However, this programme has not succeeded.

The need for this FSZ-type practical instructor training scheme was due to the fact that the already accredited Technical Vocational Instructor BSc specialization is primarily used for training practical vocational instructors for the practical training being done in school workshops, school offices, school kitchens, etc. Training with relatively high entry requirements, prioritizing the development of both theoretical and practical knowledge, experience and skills during training, has proved unjustified for small and medium-sized enterprises and for practical training within the framework of services.

The practical training courses that take place here in and out the framework of school system do not primarily need graduate specialists, but such professionals and practical vocational instructors with both secondary vocational qualifications and pedagogical qualifications who are ready and able to perform the above pedagogical tasks.

Already in 2006, training and especially application difficulties were almost foreseen for the technical instructor's BSc degree course. Important professional areas (health and human services) were left without a specialization within a vocational instructor degree course, which, at the time of its creation, was thought to be possible to be replaced through a regulation amendment, but this has not happened since. There are specializations, practical forms of education where higher education qualifications are not required. Therefore, the FSZ-type Practical Instructor scheme has become a common product between trainers and chambers.

The FSZ-type practical instructor training would have been closely linked to the different discipline branches of the technical training field, in line with the competence-based OKJ professional groups.

The aim of this training was to train practical instructors who, with their pedagogical competences based on their professional competences, are able to lead individual or small group (2-6 people) vocational traineeships within small businesses.

It follows from the above that those taking part in the training would have been able to get employment primarily at small and medium-sized entrepreneurs (e.g. in workshops, shops, offices, etc. with a few employees), in the basic, group-based training places of artisanal and craft vocational training. The primary task of the FSZ-type practical training graduates is to organize, supervise and conduct the traineeships carried out here and to keep in contact with the vocational school.

The training period was set at 2 years according to the draft, where a maximum of 60 credits of the 120 credits that could be obtained could have been included in the BSc training.

The draft structure of the training (the main study areas and their proportion) wanted to achieve the following (Table 1., Fig 2.):

Table 1: Draft structure of the FSZ-type practical instructor training

Modules	Credit points	Credit points%	Credit points included
General culture module: social and economic sciences	10	8	5
Basic vocational science module	15	12	10
Vocational theory and practice module	35	30	20
Pedagogical and psychological module	25	25	15
Methodology and teaching practice of the practical instruction	30	21	10
Final thesis	5	4	-
Total	120		60

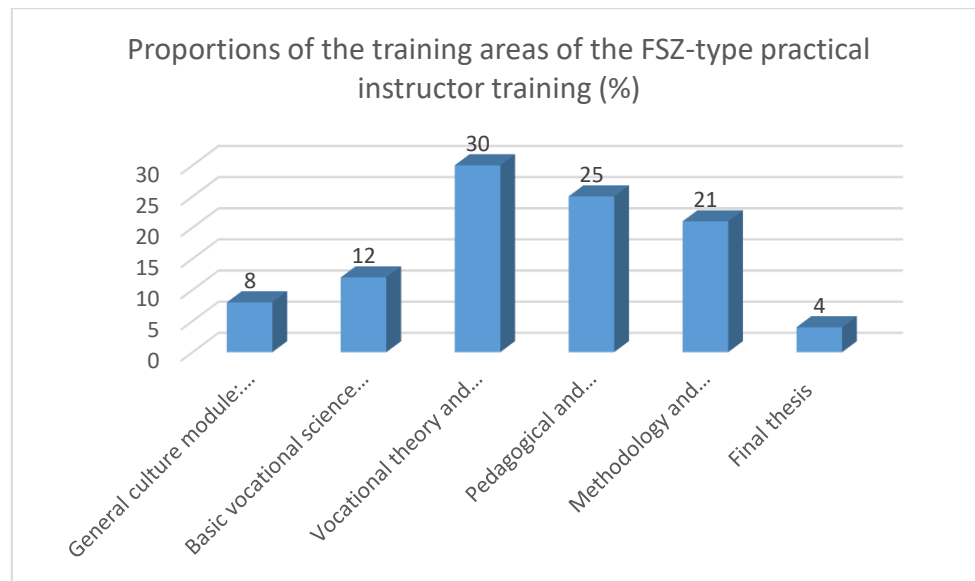


Figure 2: Proportions of the training areas of the FSZ-type practical instructor training

The FSZ-type practical instructor training was designed as a higher-level vocational training in the following 4 main areas:

- the technical area, differentiated according to the trades of its small-size and large-size industrial enterprises;
- the electrotechnical-electronical area, differentiated according to the trades;
- the human services and health area, differentiated according to the trades (hairstylist, cosmetician, nurse);
- the commerce and catering area, differentiated according to the trades.

The main subject areas of the training were planned as follows:

1. General culture module: social and economic sciences
 - Enterprising, economic and financial basic knowledge
 - Communication
2. Basic vocational science module
 - Mathematics / Biology / Chemistry
 - Physics and/or Chemistry
 - Basic knowledge of computer technology
3. Vocational theory and practice module
 - The subjects to be given here according to the trade group are primarily not theory-oriented but practice-centred.
4. Pedagogical and psychological module

- Psychology and personality development
 - Pedagogy
 - Didactics and teaching organization
 - Teaching technology
 - Educational and teaching sociology
5. Methodology and teaching practice of the practical instruction
- Methodology of the practical instruction
 - Pedagogical practice

And in all areas, of course, additional modules have appeared in conformity with the traditions and possibilities of the institution.

The FSZ-type practical instructor training mainly aimed to provide competent professionals for the school-system vocational training to lead vocational practices in practical training places of non-group and non-basic training (small businesses, shops, workshops and offices of individual jobs); to lead practical occupations of course courses and programmes for vocational training outside the school system; and to lead practical practices for the mastership training (non-tertiary course based on OKJ education and practice).

2.2. *Technical vocational instructor BSc*

As a result of the Bologna process, the technical vocational instructor training was also renewed, and, as a bachelor's degree, it joined the technical training area instead of the teacher training area. This commitment has also become significant in the development of the professional content of the specialization, by overshadowing the pedagogical content. In proportion, the degree course was mainly listed among the technical BSc fields and served only the needs of technical teacher training in the second place.

The aim of the training is to train professionals, i.e. technical vocational instructors, who, in the field of technical professions according to the National Training Register (OKJ) for their specialization are prepared to plan, organize, lead and conduct the teaching of practical subjects in vocational training, in particular within school-based and non-formal vocational training, as well as to conduct laboratory occupations related to vocational subjects and professional (operational, dual, workshop) exercises in company training places, and to conduct practical occupations. The training also includes vocational training at tertiary level, adult education, re-

training and further training, as well as preparation for the practical training tasks of public education.

The fields of competence to be developed for the technical vocational instructor course partly cover the competences of the bachelor's degree corresponding to the group(s) of specialization of the training scheme. In its professional characteristics, the preparation for practical (school, enterprise) vocational training appears in a particular, but, at the same time, also emphasised way, which is manifested in the content and requirements of scientific knowledge, economic and human knowledge, the professional knowledge of the vocational instructor, other than basic technical training courses. The content and requirements of a specialization of the technical vocational instructor training course are partly the same as the training content and requirements of the bachelor's degree course or courses corresponding to a group of professions on which the specialization of the course is based.

The 210 credits to be accumulated in the 7 semesters will be distributed among the main areas of training as follows (Table 2.):

Table 2: The draft study plan of the technical vocational instructor BSc training scheme in Dunaújváros (2006)

Field of study	Credit points	Credit points%
Natural science basic knowledge *	40	18
Economic and human knowledge *	10	9
Vocational core material *	95	43
Differentiated vocational study material *	40	18
Optional subject	10	5
Final thesis	15	7
Total:	210	100

*Depending on the specialization

The vocational teacher trainers who created the training originally intended the training to be started in both full-time and correspondence form, but, since the start of the training, none of the training places were not able to enrol any students in full-time training scheme. Besides all these, unfortunately, in accordance with the technical training field, the presence of high technical knowledge in training has resulted in the fact that it was able to start even in the correspondence form with only a small number of students and in only a few training places.

The training shall include a vocational practice period of at least 6 weeks, organised in a vocational practice place (school, company). The practice also ensures the development of professional and technical vocational instructor competences.

The Bologna system technical vocational instructor training course is therefore performed on a basic BSc level. The practical part of the training is carried out by students at the higher education institution or in vocational schools – vocational secondary schools or vocational schools. The BSc degree of vocational instructors entitles them to teach students practical knowledge in vocational schools and provides input for master's degree in engineer-teacher MA training. It is a very serious problem that there is very little interest in technical vocational instructor training. The maximum number of students in the started training in the whole country is maximum in the order of 10. This is a particular concern in the case of the introduction of dual vocational training, where a technical vocational instructor with adequate pedagogical, psychological and professional skills is not available (Simonics, 2016.)

The majority of students work in public education. They have adequate teaching practical knowledge and experience. They don't have employment problems. However, those who do not work in public education want to acquire professional knowledge, in our opinion they are sufficiently motivated and preparing for this career.

This Bologna-system technical vocational instructor training meant an excessive level of professional and basic material knowledge for students. In the last 5 years, hardly any students have applied for this form of training in all training places. The starting number of candidates who had previously enrolled was higher, but the basic objects were a major obstacle for the candidates and there was a great amount of drop-out.

Since they do not get an engineer's degree, it would be worth changing the proportion of these subjects as well as their training time. A training course with even more practice-oriented vocational training could be an alternative option in the renewal of content and structure.

2.3. Vocational instructor

In view of the impasse and failure of the technical vocational instructor training scheme, several proposals have been made to change the type and vocational area classification of the training, one of the hopeful, achievement-suggesting opportunities for this is the vocational instructor training, which was outlined in 2020 on the basis of a proposal of the ministry and is expected to be embodied as a result of the cooperation of vocational teacher training institutes.

According to the proposal, the training places want to reclass the vocational instructor BSc degree course in the teacher training area by amending Government Regulation No 139/2015. The training period would be reduced to 6 semesters and the previously developed School Vocational Instructor KKK would be updated accordingly.

The main reasons for this are:

- the integration of the vocational training can serve as a basis for standardizing the training and output requirements, for integrating specializations into the new OKJ groups of professions and streamlining the offer of higher education training;
- reclassing to the teacher training area can help to increase interest in vocational instructor training on the one hand and to move on in the vocational teaching field in terms of learning pathways;
- it is proposed to maintain the denomination in the English language designations of the specialization and qualifications as it is in the current KKK, as it is reflected also in the training reports in English;
- the aim is to support employment by naming a further area of expertise within specializations and to ensure the integration to the new OKJ groups of professions in the respect of the field of vocations;
- the requirement of professional competences as an input condition makes the practice-oriented vocational instructor training well founded (Molnár – Berki, 2020).

Within the BSc degree course, the vocational instructor training would start with the following specializations:

- technical,
- agricultural,
- business,
- services.

In the 6 semesters of the training period, the number of credits to be collected to obtain the basic degree is 180 credits and the degree course is 60-70% practice-oriented.

The aim of the training scheme is to train vocational instructors prepared for the teaching of vocational practical subjects in school-system and non-school system training courses of vocational qualifications belonging to the technical, agricultural, business and service professional groups of the National Training Register (OKJ), for the training of vocational instructors prepared for the design, organization, management and conduct of related vocational practices, who are prepared to meet teacher competence requirements and to continue their studies within the MSc degree course of vocational teachers.

The training shall be part of the preparation for the performance of coherent vocational practice periods in study workshops, study farms, study kitchens, study shops, study hospitals, in and outside vocational training centres related to practical vocational subjects, for the practical teaching tasks of the vocational training in higher education, adult education and retraining and public education.

The coherent vocational practice is an exercise organized in a practice place (school, company) for a period of at least six weeks. The practice also ensures the development of pedagogical competences in accordance with professional specialization. Students record their experience gained during the vocational practice in a portfolio and an accompanying seminar is attached to the practice.

In the course of the training, students continuously solve project tasks related to their various subjects (Table 3.) (professional group/sector knowledge within the professional field of the NAT, the National Core Curriculum, and the OKJ, the National Qualification Register, pedagogical-psychological practical knowledge), which are conditional on participation in the school exercises specified in the curriculum.

A compulsory coherent school and workplace practice shall take place during the last half of the training. In the course of this, students acquire the specifics and tasks of practical training of their professional field in vocational training institutions and practical training places. In the course of the practice, they carry out independent educational and professional activities under the guidance of their mentors.

Table 3: The draft study plan of the vocational instructor training scheme in Dunaújváros

Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6
Psychology (5)	Psychology (5)	Teaching technology practice (5)	Optional: vocational knowledge of the branch IV. V. (2*5)	Vocational practice (2*5)	Coherent school practice (25)
Pedagogy (5)	Didactics (5)	Optional: pedagogy-psychology (5)			
English language practice (5)	English language practice (5)	Optional: vocational knowledge of the branch I.II.III (3*5)	Practical teaching methodology I.II.III. (3*5)	Teaching methodology practice (3*5)	
Information technology basics (ECDL) (5)	Information technology basics (ECDL) (5)				
Economy and vocational training (5)	National Core Curriculum (5)				
Bases of the career of teacher and vocational instructor (5)	Register of professions, practice	Optional (5)	Optional (5)	Final thesis (5)	
Common studies		Partly common, speciality of the branch		In individual training	

3. Epilogue

In this study, as well as in our previous study examining the history, structure and content of the training course, we have uncovered some of the most important nodes, which can be summarized here.

Vocational teacher training is also not free of some dilemmas that go through the whole of the technical vocational training course:

Pedagogical preparation must be fully subordinated to the teaching of professional subjects, i.e. can it be included only within the framework of vocational methodologies at most?

Does pedagogical training only consist of direct preparation for educational and teaching activities in schools?

Is the professional and pedagogical content, structure and grouping of vocational teacher training determined by the subject system and teaching material of the relevant secondary institution?

Does the pedagogical preparation follow the traditional content and system of pedagogical science, and is it conducted independently and in isolation from the professional area? (Ballér, 1985)

The dilemmas can be enhanced by adding that in most places the training takes place in correspondence form, built on already acquired professional knowledge, further developing it to BSc level during several semesters.

This situation is particularly unfavourable from the point of view of pedagogical preparation, even if we know that most students work in vocational teaching positions. In these circumstances, there is not enough time, there is no possibility to discuss and deepen the theoretical material together, to perform personality and attitude-forming exercises, to develop pedagogical skills, and to prepare the final thesis using scientific methods.

The importance of pedagogical preparation is that in this process we can develop personality traits that are essential for effective pedagogical work, whatever vocational subjects the instructors teach (Ballér, 1985).

The further training of technical teachers has been carried out sporadically and organized by several institutions so far. There is a lack of a central, uniform system for further training. While higher education is not centralized, this is understandable. However, it is indisputable that the most important objective of further training would be further training in the field, by continuing the subject pedagogical courses related to subjects or group of subjects. In vocational teacher training and technical teacher training, this system has not been developed, unfortunately. Looking to the future, this could be a well-defined direction that can be continued following the provisions of the Vocational Training Act, given that the usefulness and practical use of this would be of outstanding importance for the further training of colleagues who do not have a teacher's degree.

The training and further training of teachers is one of the basic conditions for the quality and effectiveness of educational and instructive activities in vocational training.

We increasingly require technical educators to take an independent initiative, to explore, use and creatively contribute to the transformation and development of the school. The teacher can only meet these expectations if:

- his technical knowledge keeps pace with the domestic development of technology, detains integrated, more comprehensive knowledge and capability structures than the usual vocational education requires,
- his knowledge-centred subject methodological thinking is transformed into a modern approach, in which the new possibilities of learning are given room,
- he gets to know the new possibilities of the tool system of teaching,
- he gets to know the functions and methods of the general and special skills development and talent management,
- he can make different forms of activity meaningful and useful to students,
- he can incorporate the information obtained by students outside the school into the training process.

The fulfilment of the requirements raised against technical teachers is helped by the fact that the material of their training can be intertwined with the experience of a practicing teacher with technical knowledge (Szatmáry, 1985). These expectations have been formulated 35 years ago, but they are still true today, without exception.

The role of our vocational instructors is determining in developing the personality marks of students, so a great attention should be given to their training, further training, financial esteem and selection since the countries ahead of us in vocational training are in a much better position in this area than we are. In the context of further training, it would be advisable to introduce more and more colleagues to the latest technical information and new technologies (Buzgó, 1988).

The shortage of professional teachers in vocational training is minimal, but the proportion of people without pedagogical qualifications is high. On this basis, one of the defining elements of development is teacher training itself. (Szalai, 1988) and our further question raised in 2020 is legitimate concerning how the new Vocational Training Act will help these tasks.

In the history of the training of professional teachers, changes in the respective higher education policy are also reflected, perhaps even more so than changes in teacher training as a whole. In the history of education, in the history of higher education, the antecedents and roots of the training and of the institutional system are shown by the facts of the professional management of the sectors, of the training of technicians, of the transformation and realization of the higher education institution system (Rádli, 2011).

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Short professional biography

Dr. Anetta Bacsa-Bán is the general director of the Teacher Training Centre of the University of Dunaújváros, in the rank of Associate Professor. She studied sociology and then Hungarian language and literature at the Faculty of Human Sciences of the University of Miskolc. He obtained his degree in science from the Doctoral School of Educational Sciences of ELTE-PPK in the field of educational sciences. His research area: student tracking, suitability tests and vocational teacher training, as well as vocational training. As head of research for many projects, she has gained experience in higher education research. Her publications cover all the areas with which the vocational teacher training and the problem of higher education can be approached to sociologists over the past decade and a half.