



## The Examination of Vocational Teachers' Methodological Culture

**Gyula Gubán, László Kadocsa**

College of Dunaújváros (Hungary)

[laszlo.kadocsa@mail.duf.hu](mailto:laszlo.kadocsa@mail.duf.hu), [gyulia.guban@mail.duf.hu](mailto:gyulia.guban@mail.duf.hu)

### Abstract

*In the past two decades, the Hungarian vocational institutional system and its content were characterized by constant change, but the series of the reforms did not reach its aim after all. While the participant of the economy may have counted on the well-trained workforce as the consequence of the development taking place in the training in the 90s, today we increasingly face criticism regarding the training and opinions criticizing the vocational erudition of graduated students.*

*School leavers, considering both their quality and quantity were found increasingly more distant from the special claim of the labour market. This resulted in manpower shortage at smallholder organizations and unemployment among career starters. As a consequence of expansion of the education, more and more students registered into an institution giving high school graduation, while the skilled worker career suffered considerable loss of prestige. The manual labour was depreciated in spite of the fact that the vocational training policy recognised the significance of the vocational training already at the beginning of 2000s. In some industries (construction, mechanical engineering), skills shortage emerged, while - including adult education - more people obtained qualification not required by the labour market, or left the school system without professional qualification.*

*The poor quality of the training and the simple methodological culture of the vocational teachers working in the vocational institutions play a considerable role in the development of the situation.*

*In our study we wish to present the research and its results, which intended to eliminate partly the methodological deficit. This paper presents the important stages, milestones of Hungarian vocational education as well as the directions of development ahead of us. We present the research, the hypothesis of which was that most of the professional teachers mainly use the "traditional" teacher-centred methods, is hardly familiar with innovative methodological solutions for the development, differentiation, or if they know them they generally do not apply them in practice.*

*We sum up the experience we have gained from the questionnaires and interviews with the target group among Dunaújváros College engineering teacher students and their colleagues in the vocational institutions.*

### 1. Changes and developments in the Hungarian vocational training in the past two decades

The situation analyses done at the end of the 1980s pointed out the troubles of the domestic vocational training. The most serious ones (and partly existing today) were as follows:

- The structure of the vocational training is too rigid, the opportunity of the passage between different types of school is not provided properly.
- Students are forced to an early choice of career.
- The training trade system is specialized and inflexible. The training cannot follow the labour-market claims changing quickly.
- The entrant unemployed workers' proportion is high.
- The skills acquired are not enough to enter the labour market successfully, especially with regard to the required competencies.
- The institutional system is too fragmented, the infrastructure of the training is underdeveloped. The material and technical facilities are outdated.
- Students disparities in secondary vocational education is typical: decreasing number of children, high rate of dropouts in the vocational school
- The vocational teachers' informational and communicational technical erudition and their foreign language knowledge are weak.

On the basis of all these, the government launched an overall development programme in the early nineties. The first considerable project was "The development of the human resources" program between 1991-1997 whose main objectives were as follows:



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- Help the unemployed to find jobs and help employers to be able to apply adequately skilled workforce.
- Ensure good quality education to the youth in secondary vocational education as the development of the changing labour market needs adaptive training model. (form a vocational education model adapting to the labour-market claims better.)
- Promote the professional and retraining education for adults.
- Bridge the gap between higher education and the new technological and leadership demands of the market economy.

The Youth Training program, which began in 1991, was decisive from two points of view. On the one hand, this was the first major domestic investment training program that tried to deal with the crisis. The program determined the long-term educational development, involving some vocational and industrial schools. On the other hand, when the prestige of vocational training decreased significantly, especially between 1990 - 1994, the profession group training was attractive for young people.

The government established the conditions to launch a new program in 1997. It made possible to continue the program, extending both horizontal and vertical directions of modernization. "The modernization of the youth" training program (1997-2002) was built close to the program "Human resources development". The development of adult education and training programs in secondary was continued and finished. The program consisted of two components: secondary vocational orientation and market-orientated training for young people. The professional orientation was designed to streamline the training for the youth, reduce the unemployment among school leavers and facilitate the entrance from school to the labour market for young people.

The "Vocational School Development Program" was the medium-term development program of vocational education between 2003 - 2011. The main tasks of the program were as follows:

-Developing curricula, teaching materials, teaching aids, programs that provide knowledge and simple acquisition of professional qualifications which are useful in the labour market for disadvantaged students.

-Teacher education and further training, development of management training system that provides acquiring advanced knowledge and effective education, training and educational methods for vocational teachers and trainers .

-Supporting a training system that allows the transfer of pedagogical knowledge accumulated in particular schools to teachers in other institutions.

-Preparing training and further education programs for company trainers and masters.-Encouraging the participation of the economy

-Developing a vocational school financing system.

-Reviewing and developing the legal system. (1)

It is important to point out that over the past two decades, despite significant training programs from loans (so-called World Bank Loan: Human Resources Development 1992-1996, modernization of training youth 1998-2002) and grants (PHARE Programme 1994-96 (vocational school model extension) implemented processes taking place in the education system had a negative impact on the labour market.

### **1.1 Change in the structure of Hungarian vocational training**

The Hungarian education system is consistent. Its components are: public education which provides the basic and secondary general education knowledge, vocational training, higher education and adult education. The purpose of the education system is that everyone can find their place in the system highlighting lifelong learning. The structural characteristics of the national education system are regulated by the Public Education Act. Issues related to vocational training is regulated by the Vocational Training Act. (1.2.) Primary schools from the first to the eighth grade, as well as four-, six-or eight-year grammar schools provide general education.

Secondary vocational schools accept students after finishing the eighth grade in elementary school. Secondary vocational schools are the most popular, the most common type of institutions. This school provides an opportunity to enter the higher education or into the labour market oriented post-secondary vocational training. In the 2012/2013 academic year 41.5% of young people studied in this school type.

Vocational school provides general and pre-vocational education in grades 9 and 10, normally followed by three or two years of VET. At the end of their studies, students acquire a qualification (ISCED 2C or mostly 3C). At the same time, three-year 'early VET' programmes providing VET from grade 9 were introduced in 2010. The new VET Act of 2011 provides the introduction of a new,



uniform three-year (grades 9-11) programme. From September 2013 dual vocational training allows students (23.4%) to begin vocational training at the age of 14. Students of vocational schools can obtain vocational qualification at ISCED 3C or 2C level in NTR. The training system supports the chance of disabled young people or with special needs. In specialized vocational schools, teaching is supported by special teaching materials and methods as well as special education teachers co-operating with teachers. Since 1993 vocational educational institutions could have been maintained by church, individual person, foundation, legal persons and other economic enterprises - except for local governments.

Summarizing all above, we can state that as a part of the vocational training reform beginning in the 80s first the adaptive model (3) appeared in the system, followed by a 4 +1 (year), 2 +2, 2 +3 structured training models. The vertical changes of the educational system in the 90s (4) were due to the legal, demographic, and economic conditions. The vertical change in grades 9-10 was indicated by the National Register (NTR) released in 1993 and ISCED (International Standard Classification of Education) levelling completed by 1996 and introducing the NCC (National Curriculum), which lengthened general education continues postponing vocational training by the age of 16. The 1999 Education Act modification brought a major change increasing the period of apprenticeship from three to four years. In 2010 the economic and labour market pressures intensified the need to introduce the former secondary school education and the three-year long vocational training (dual training), which together with a 16-year restoration of the compulsory education age changed the structure of the secondary vocational education again in 2013.

## 2. Methodological research on the culture of professional teachers and main results

Although the continuous structure and content changes refreshed the vocational education infrastructure and modern curricula were developed, this modernization was accompanied by only a modest methodological transformation. All the development programs made efforts to develop teachers' professional knowledge, but these results could not be seen in practice; VET teachers' methodological knowledge has not improved. The domestic vocational researches did not analyse this situation properly. (5) Only a few methodological studies can be found about teaching methods in vocational subjects and teachers' professional culture methodology though almost all development plans emphasized the importance of methodological preparation of teachers. This approach is also reinforced in the training concept released in 2012 containing the below main chapters:

- The course structure is adapted to the economic needs (New NTR 2012)
- Improve the effectiveness of school-based training,
- The institutional system (integrated vocational training centre) transformation, cost-effective operation
- The development of professional competencies
- The introduction of dual training, strengthening the role of the Chambers of Industry

All these antecedents made it necessary to examine the methodological culture of the teachers participating in master course and also their own colleges' in their own schools.

Our hypotheses was that most of the professional teachers apply the "traditional" teacher-centred methods, fewer recognize innovative methodological solutions suitable for the development and differentiation, or if they know these methods they do not to apply them in practice. The research methods, instruments are:

- Analysis of the vocational teacher training curricula
- Teacher Questionnaire
- Analysis of teaching documents and lesson plans
- Interviewing target groups

## 3. The results of the research

After analysing the pilot project (November-December 2013) a new questionnaire research- including the shaping of the new research database - took place in February-March 2014. The questionnaire consists of 21 questions that we divided into 5 sections. The first section deals with personal details, the second includes methodological queries about the vocational subject teaching, the third one includes questions on learning efficacy check, while the fourth was meant to point out the limits of certain teaching methods. The last section of the questionnaire includes 4 open queries to explore the difficulties of teachers training experiences and vocational subject teaching. During the research we paid high attention on exploring and collecting ideas on applied teaching methods, group work, problem solving activities which are the essential of the research basically. We were curious to learn



the opinions about class differentiation, classroom effectiveness, teaching infrastructure and the forming of learning environment. We wished to gain information from the participants of the research about their former education experiences, methods they have been involved in during their study.

Based on the domestic and regional data, we reached out for more than 3000 pedagogues (non representative sample) with the help of our on-line questionnaire for which we received 539 completed forms. The responders consisted of 181 male and 353 female. As per the data received 208 vocational pedagogues and 331 public education pedagogues responded to our queries.

With regards to teachers' educational qualification we can observe that more than 70% of them has university degree. We can assume that the master training of the last few years increased this rate towards university degree. This ratio can be considered as extremely beneficial from professional point of view, and will influence the quality of vocational education significantly.

As per the 7th question that deals with professional years we can conclude that both teacher groups (teachers from public education, teachers from vocational training) are 'aging', which calls our attention of reinforcement. More than half of the teachers are in profession for more than 14 years.

The 10/12 th methodological issues is actually the " diversity " to reveal. The explanation and narrative presentation showed the dominance of the responses in both groups. More than 80% of the respondents identified the teacher's lecture, demonstration, explanation and narrative method as well as the individual training method as the most commonly applied methods. Among them, the presentation and the teacher's explanation is significant, showing that the teacher's dominance is strongly present in the vocational education subjects. Does this indicate that selection methods is independent from the contents of the subject ? The individual work also appeared as an important methodological element in the answers but this seems to contradict the relatively high rate of frontal teaching (application, exercise, joint problem solving) in the responses. (Fig.1, 2)

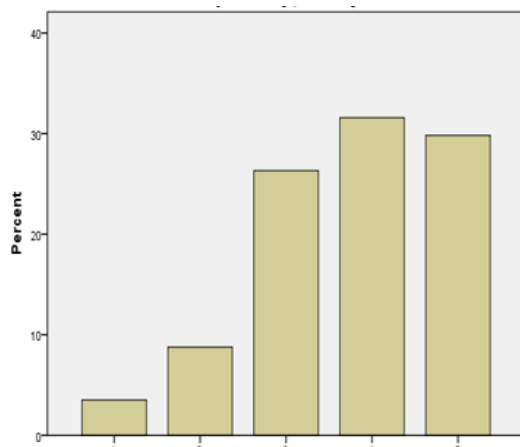


Fig.1 How often to apply the method 'teacher' lecture

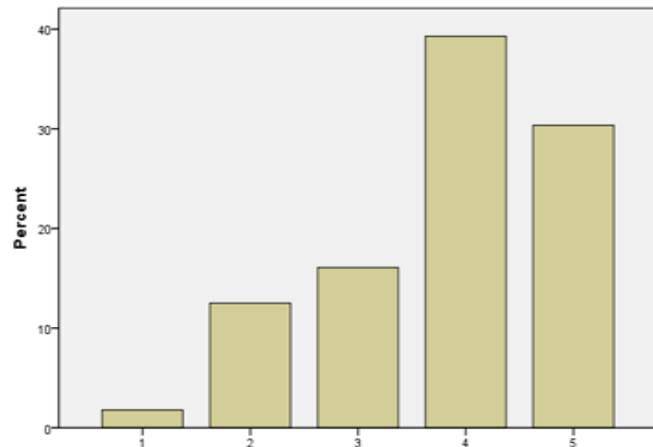


Fig.3 How often apply the method of individual of work

The use of co-operative procedures, the project method is not widespread. It is a less popular method and 72% of the respondents did not apply these in practice. When we asked to see what are the obstacles in the application of these methods, the lack of time (75%), the work invested and income disproportionate, the lack of central tasks, facilitating learning tools and lack of preparation were raised by the respondents.as main reason.

We got thoughtful answers for group work and the application of homework. Both methods were less frequently used, thus confirming the hypothesis that the traditional teaching methods dominate in practice.

Using ICT device can also shows a similar picture. The teachers prefer the projector and the Internet. Regarding the use of ICT tools we can report an improvement compared to previous surveys. Respondents up to 60% to 65% are taking the advantage of the possibilities offered by computer. However, the application of interactive boards (developed during an earlier project) found massively in the schools is extremely low (78% hardly uses them).

Written summative and formative methods are used by teachers as the most common way to control of the professional knowledge of students. The ratio of verbal control has significantly been reduced. 74% of the respondents choose the open question type during writing assignments. This equals with the control habit of professional technical subjects. However, the lack of verbal compliance -



particularly for the case of apprentices - cause serious communication problems resulting in low expression levels of professional skill and, presumably, can also cause poor results on the PISA surveys.

#### 4. Conclusions and recommendations

The first finding of the research is that professional teachers prefer the direct transfer of knowledge rather than the conservative approach to the constructivist approach, which builds on the active participation of students. The responses confirmed our assumption that not only the general education teacher is characteristic of methodological monism, this is also typical of professional teachers in our study as well.

The teaching experience has proved that effective learning is highly influenced by the quality of teaching. Taking this into account the findings on teacher training is that we must continue to increase the number of hours of practical engineering teacher training. So far it is advisable to increase from 45% to over 50%. It is not enough, however, only to increase the number of hours, but the content of the exercises must also be changed. We have to elaborate the system of tasks and micro-teaching that will help us to introduce the learning habits adapted methods.

We have to increase the time of the teaching practices and classroom requirement must formulate the use of modern ICT tools. In order for the teachers of special subjects to use ICT tools properly, we need to introduce the digital learning materials for their preparation of new possibilities in teacher training and teacher in-service training.

The replies showed that the majority of respondents agree with the use of modern tools and techniques, but for the practical realization there is a need for a change in attitude in the practice of professional training and the preparation of teachers alike.

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