

TEACHER TRAINING FOR THE TECHNICAL SECONDARY EDUCATION

Lajos VARGA

Department of Technical Education
Budapest University of Technology and Economics
H-1111 Budapest, Egry J. Street 1, Hungary
Phone: +36-1-463-1698
Fax: +36-1-463-1697

Received: July 20, 2000

Abstract

This paper analyzes in detail the school system in Hungary and the situation of the teacher training for the general education. We have the need to introduce the curriculum system of the teacher education. We will also show the autonomy of training institutions concerning the national core curriculum for teacher education. In our paper the teacher training in the Department Technical Education (DTE) will be introduced.

Keywords: teacher training, school system, curriculum, teacher education.

The main field of the activity of the Department Technical Education deals with training of teachers for the school-based technical education and training on secondary level. The secondary schools for vocational education and training are integrated parts of the Hungarian school system which is regulated by the Public Education Act.

1. The School System in Hungary

Since the first royal education act *Ratio Educationis* (1777) the public education is regulated by the state in Hungary. Nowadays the Public Education Act (emitted in 1993, modified in 1996) gives the legal background of the public education and regulates its school system. The figure shows the main features of this system.

According to the school law children have to attend school in the age of 6–18.

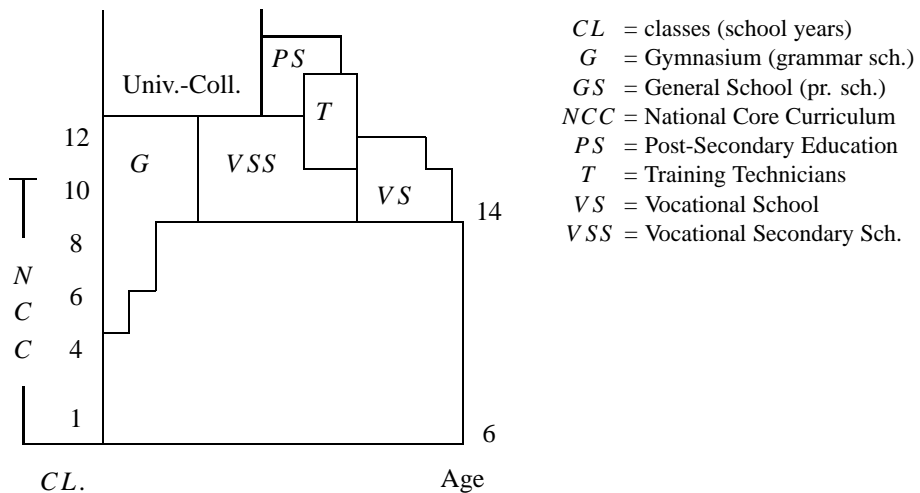
GS = General School

This is the primary school in Hungary. Usually it lasts for 8 years and it provides general education. In the lower grade (years 1–3) pupils have activities in writing, reading, counting, self-care, environment knowledge and physical education. A pupil group has usually 3 teachers. On the middle grade (years 4–5) teaching starts according to a subject system and on the upper grade (years 5–8)

teaching is running according a full subject system (traditional academic subjects and a special subject ‘technics’).

G = Gymnasium (Grammar School)

This school has long traditions in the Hungarian society. It provides general education (in traditional academic subjects and technics). It will be closed by a final examination (ex. for maturation) and in this way it leads immediately to studies in the higher education (in universities and colleges).



VSS = Vocational Secondary School

It provides general education (nearly in the same academic subjects as the Gymnasium) but also vocational education for a job family. The stream for general education will be closed by the same final examination (ex. for maturation) as in the Gymnasium and in this way it leads also to the higher education.

The vocational education deals only with a foundation for a job family and the special training for the job is running either in the *PS* or on the job. The vocational education (also in the *VS*) consists of two parts: instruction in the vocational theory and practical training.

This type of secondary schools lasts for 4 years and it is combined with the education of technicians (*T*).

T = Education Technicians

‘Technician’ means in Hungary a qualification between skilled worker (foreman, master) and a qualification B. Engineering. The education of technicians is built in (2+3 system = 2 years *VSS*-stream + 3 years *T*-stream) or upon the education in a *VSS* (4+1 system = 4 years *VSS* stream + 1 /in some job families 2/ years

T-stream). Technician students have to pass the same final examination (at the end of the 4th year) as the pupils of a *VSS* stream or *G*.

***PS* = Post-Secondary Education**

Post-secondary education is running in co-operation of a *VSS* and a university or college. Some studies in the *PS* will be recognised in university or college studies according to a credit system.

***VS* = Vocational School**

It continues the general education started in *GS* and provides vocational education (instruction in vocational theory and practical training) for simpler job families. Usually it lasts for 3 years.

2. Teacher Education

Teacher Training for the General Education

Teachers for the general education get training on three levels according to three levels of the general education in the Hungarian schools.

Teachers for the 1–4th forms of the *GS* are educated in teacher training colleges in a 4-years course.

Teachers for 5–8th forms of the *GS* are trained also in teacher training colleges, in 4-year ‘two-subjects’ courses. (They acquire qualification for teaching in two subjects.)

Teachers for general education in secondary schools (*G*, *VSS* and *VS*) are trained at ‘universities of sciences’ also according to a ‘two-subject system’. The studies last for 5 years.

In the last years of the 90’s a remarkable tendency is to couple the two higher levels of the teacher education (i.e. the teacher education for the school-grades 5–12) and to provide it in the frame of a university.

Teacher Training for the Vocational Education

The school-based vocational education and training consists of two parts: instruction in vocational theory and practical training.

Teachers for the vocational theory are trained on two levels: on university level in 5-years courses or on college-level in 4-years courses.

Trainers for the practical training in *VSS* and *VS* are trained on college level, usually in 3-years courses.

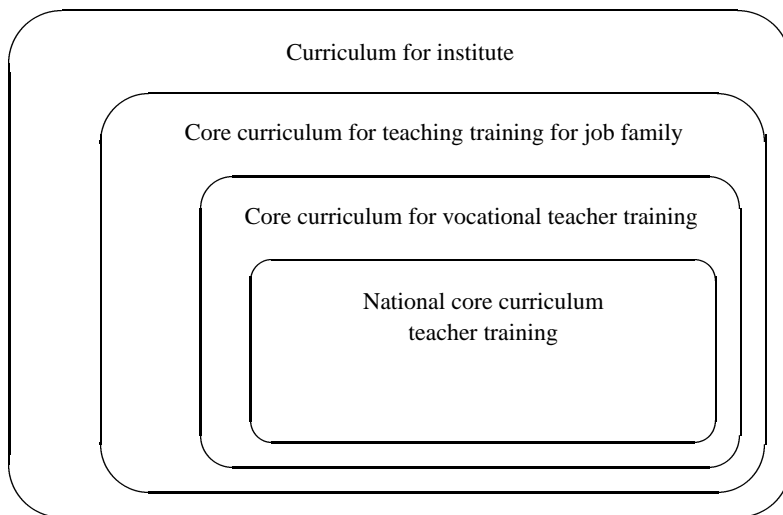
3. The Curriculum System of the Teacher Education

In Hungary it is regulated by governmental acts what kind of requirements are to be fulfilled to acquire a qualification on college or university level.

The basic requirements for (every kind of) teacher education were passed in 1997. These requirements determinate the core curriculum for the teacher education on national level.

On the basis of the national core curriculum the curriculum system of the teacher training for vocational education and training (VET) is developed. This system consists of three levels: core curriculum of the teacher education for VET as a whole, the core curricula for the job families and the detailed curricula (according to job families) of the training institutions.

(Concerning the job families. Since the first World Bank supported project Youth Vocational Training Programme /1993–1997/ and its sub-program Development of the Vocational Teacher Training /ten training institutions involved and co-ordinated by the Department Technical Education of the TUB/ the following job-families are considered as the power points of VET: mechanics, electronics, computing, telecommunication, chemical industry, building, transport, agriculture, food industry, environmental protection and water resources, commerce-tourism, catering, economics, human services.)



4. The National Core Curriculum for Teacher Training

The national core curriculum for teacher training consists of the fields as follows.

4.1. Theoretical Training

- *Psychology*

Themes: Introduction to psychology, Maturation of psyche, Psychology of teaching, Social psychology in school.

- *Pedagogy*

Themes: History of teaching, Theoretical foundation of teaching, Theory of pedagogy, Hungarian educational system, Institutions for controlling the schools, Sociology in teaching, Fundamentals of management.

4.2. Theory and Practice of Training for Special Fields of Teaching Activities

Themes: The work of the headmaster, Career pedagogy, Hygiene in school, Recognition of mentally retarded children, Gifted children, Special tasks for the boarding school teacher.

4.3. Development of the Teacher's Personality, Professional Ability and Skills

Themes:

- *The management and evaluation of learning:* motivation, differentiation, individualism, the use of technology in teaching, development of curriculum, using school equipment, supervision, evaluation, marking.
- *Development of personality and skill:* communication, decision making, management, innovation, research methods in education, group dynamics, interpersonal relations, conflicts in the class room.

4.4. Methodology

Issues in the technology of education, methodology, the teaching of vocational subjects, subject group connected to school practice.

4.5. *Practical Training*

Practical training of teaching: observation and evaluation of lessons, teaching, activities beyond lessons.

Practice of education: student observation of handling educational problems in real situations, contribution in problem solving.

4.6. *Preparation for a Life in Teaching*

The essential fields for the intellectual life of teachers: values, ethics, logic, law, family sociology, cultural sociology.

5. The Autonomy of Training Institutions Concerning the National Core Curriculum for Teacher Education

In accordance with the principle of institute autonomy the training institution specifies:

- The content of subjects. Integration, differentiation or combined approaches for structuring the curriculum.
- the depth, extent and direction (theoretical-practical) of the syllabuses.
- Time schedule for teaching.

University training stresses a scientific foundation and puts emphasis on Ph.D. training.

College training gives a more practical training.

6. The Basic Structure of Hungarian Vocational Teacher Training

Teaching requires two kinds of knowledge: vocational knowledge of the subject and pedagogical knowledge of education.

In Hungary vocational and pedagogical training are not necessarily connected with each other. The basics of the teacher training is the training which leads to a vocational qualification and the pedagogical training runs either concurrent with the vocational training, or follows it.

The other important characteristic is that the university or college level of the vocational qualification determines the level of teacher qualification.

According to this principle the structure of the teacher education for technical job families is shown in the table below.

Vocational qualification	Pedagogical qualification	Teacher qualification
M. Eng.	+	M. Ed. = technical teacher, university level
B. Eng.	+	B. Ed. = technical teacher, college level
Technician q.	+	B. Ed. = technical trainer, college level

Therefore in this system each teacher is required to have two qualifications, which means that they can work in education and in industry as well. In this way a close contact is ensured between the school and industry. Thus they can easily follow the current trends in technical development. Teachers are able to work in technical fields as well, in case they leave teaching, which helps to provide flexibility for the teaching staff.

Because of this existing system the vocational training of the would-be teacher is given by the vocational departments according to their independent subject programme and the pedagogical training is provided by the Department Technical Education. The connection between the two fields of training is mainly provided by the training in teaching technology (a field of the pedagogical training) which is a fundamental part of teacher training.

7. The Core Curriculum for Technical Teacher Training

The aim of the development of the VET is to create a flexible system for the needs of the labour market (for training skilled workers and technicians, who can be easily retrained and who have the possibility to be further educated).

The labour market is continuously changing in technical-economical areas such as microelectronics, computers and communication technology. This puts two demands on teachers of the VET:

- The range of the teacher's work is widening. There is no wide gap between the vocational training of undergraduates and workers any more. A new intermediate level of education has developed. The social-political structure's demands for the training of disadvantaged are increasing. Curriculum development is becoming more important.
- The economy needs technicians who can fit easily into different jobs.

The increasingly stressed task of the continuously changing subjects is to improve the student's general abilities, in addition to the education of vocational knowledge and abilities, which includes flexibility, technical intelligence, the ability to work within a group, perseverance. (The vocational requirements for the labour market to guarantee success in employment is a key qualification in developed countries.)

Vocational teacher training prepares teachers to train people to be multi-skilled workers and technicians who can adapt themselves to a changing labour market, if the vocational teachers themselves are properly trained. In teacher training appropriate 'content-means-method' formations help the activity oriented teacher training, providing a model and style for a future career in teaching. Activity oriented

teacher training appears in the model of competence based teacher training, which defines the aim of training as developing teacher competency.

The module system of the curriculum for teacher training fixes only the proportion of the modules. The institutes adopt it according to their own needs.

According to considerations above a team of the teaching staff of institutions that are involved in technical teacher training has developed the following core curriculum for the technical teacher training.

8. The Modules for Vocational Teacher Training

<i>Subjects of teacher training not directly related to a teaching career</i>	2–6%
1. Logic	
2. Ethics	
3. Communication	
4. <i>Psychology</i>	10–12%
<i>Pedagogy</i>	20–23%
5. Theory of education	
6. Didactics	
7. History of education	
8. <i>Vocational training and economy</i>	2–6%
9. <i>Management of education</i>	2–6%
10. <i>Methodology of education</i> (by job families)	10–15%
11. <i>Technology of education</i>	3–6%
12. <i>Complementary subjects</i>	8–15%
13. <i>Development of teacher competency</i>	28–31%
14. <i>Career guidance</i>	4–6%
15. <i>Final project</i>	

The most important areas are: the development of teacher competency, methodology, vocational training and economy, technology of education. These are the project modules. The modules can be taught in integrated forms as well.

The training institutions adopt this core curriculum to their special needs and possibilities. In this way a common basics is ensured in the training on the one hand and an optimal flexibility on institution-level on the other hand.

9. Teacher Training in the Department Technical Education (DTE)

The curricula for the training (curricula on institutional level) follow the modules of the core curriculum presented under paragraph 8.

In the Department there are about 900 students who intend to make teachers and instructors of the vocational education. There are daytime and correspondence courses in the three levels of training.

9.1. The Level 'Engineer-Teacher'

The students of this level are the students of an engineer course of the university and in the same time they have teacher training studies in the DTE.

After five years engineering + 1 year pedagogical studies they get two qualifications: one as an engineer and one as a teacher (M. Eng. + M. Education).

The students of the correspondence courses are already engineers who are moving from the industry to the vocational education. These engineers get a teacher qualification during a two years study. Their studies close with a final examination. The engineer-teachers are qualified to teach vocational theoretical subjects in any kind of vocational education form and level.

Total: 152 students

9.2. The Level 'Technical Teacher'

For this level of training there are only correspondence courses. The students are already graduates of a technical college (B. Eng.).

After two years their study closed with final examination and in this way they acquire the qualification 'B. Ed.'.

The technical-teachers are qualified to teach vocational theoretical subjects in the skilled-workers education and laboratory practical subjects in the secondary technical schools and in the technician's education.

Total: 77 students.

9.3. The Level 'Technical Trainer'

There are only correspondence courses in the training of this level.

The four criteria for these students to start their studies are as follows:

- matriculation,
- technical vocational qualification on secondary level (*ET* or *SVS*),
- minimum three years practice in their profession,
- succeeded entrance examination.

The entrance examination consists of examination in 4 subjects (two written and two oral tests). Their training duration is three years, closed with final examination (B. Ed.). The technical trainers are qualified for the practice in the secondary vocational education (technical job families).

Total: 311 students.

References

- [1] SALLAY, M. (ed.): A New Vocational Training Model for Hungary. Essays. Budapest, General Press, 1996.
- [2] LANNERT, J.: Education in Hungary. Budapest, National Institute of Public Education, 1996.
- [3] SZEKERES, T.–VÁSÁRHELYI, ZS.: The Development of Staff Participation in Teacher-Engineer Training. In: A. Toth (ed.): Staff Development in Technical Teacher Training. Budapest, ATEE, 1998.
- [4] TOTH, A.: The Staff Development of Technical Teacher Training Faculties. Ibid. pp. 76–87.
- [5] VARGA, L.: Expectations and Methods of Staff Development, Ibid. pp. 88–106.
- [6] VARGA, L.: Qualification Requirements and Curricula for Technical Teacher Training in Hungary. In: A. Toth (ed.): Some Aspects of Vocational and Technical Teacher Training. ATEE, Brussels, pp. 34–38, 1995.
- [7] VARGA, L.: Comparative Study on the Theoretical Training of Technical Teachers. Ibid. pp. 53–64.
- [8] VENTER, GY. – VARGA, L.: Teacher Education for VET in Hungary. In: van Buer, J.–Seeber, S.–Dalkalatshev, H.: Control of Educational Processes, Effectiveness and Efficiency of Vocational Education and Training. Documentation of the Summer School from 6th September to 11th September 1998 in Sofia (Bulgaria). UNCC – Humboldt Universität, Sofia - Berlin. pp. 119–140.