

# Chapter 12

## The Use of New Teaching and Learning Technologies for Professional Qualification Development in the System of the Initial and Secondary Vocational Education



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### 12.1 The Quality of Education Is an Indicator for Achievement of Results

Today the education has become one of the most important indicators and the priority areas of the global social evolution. The human capital formation and human fulfilment for the benefit of individuals and the society implies a special responsibility of the state in constructing of the education system, focused on result orientation and needs satisfaction of the society (Molchan 2014).

The quality of education is one of the most reliable indicators of the future development of any nation (the national sustainable development strategy of the Kyrgyz Republic for the period 2013–2017).

The main directions in enhancing the credibility and quality of vocational education are laid down in the National Education Development Strategy until 2020.

The action plan for implementation of the National Education Development Strategy in the Kyrgyz Republic for 2012–2020 designates the fundamentals for the result-oriented qualitative education, i.e. training of skilled workers of the appropriate level and profile, competitive in the labour market, competent, responsible, mastering their professions and well-oriented in the allied areas, able to work effectively in the specialty, ready for continuous professional growth, having social and professional mobility and satisfying the needs of a person in receiving the appropriate education.

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## **12.2 The Ways for Solution of the Problems Related to Providing the Result-Based Quality Education**

The introduction of the state standards for the initial vocational education of the new generation has become one of the solutions of this problem. The principal difference of the new standard underlies in orienting towards the value, but not the subject matter. The key concept of the modern education is the concept of competencies and their formation, which is stated as one of the main purposes of the vocational education.

The ongoing intensive upgrading and modernizing of all components of the educational process at all levels of the vocational education system objectively has raised the bar of the professional requirements for teaching staff.

However, without the professional development of teachers and formation of the teaching staff, which meets the demands of the modern life, it is impossible to improve significantly the quality of education and its competitiveness.

The issue of continuous professional development of teachers and masters of vocational education is a determining factor in the education reform and a key factor in the work of the Republican Scientific-Methodological Centre (RSMC) of the subordinate structure of the state agency for initial and secondary vocational education.

The study of the outcomes of the training needs' analysis of the teaching staff of the educational institutions of the initial and secondary vocational education testifies that teachers and masters of vocational training are not always ready to accomplish the tasks, which the state sets before them, as their professional competences and mentalities do not meet the requirements for modernization of the vocational education. Ill-preparedness of the modern teacher in achieving a high quality education is partly stipulated by the outdated psychological-pedagogical knowledge.

More than 60% of the teaching staff of the system needs to upgrade the knowledge on modern approaches in teaching and evaluating students' achievements and in the development of social partnership, and more than 50% of teachers needs to enhance the capacities in the field of key competencies (communicative, leadership, information and communication competence and professional ethics).

In this regard, the modules, which were developed with the assistance of the GIZ project in the framework of a regional teacher training network (vocational pedagogy/didactics) in the countries of Central Asia (Kazakhstan, Tajikistan, Kyrgyzstan and Uzbekistan) allowed creating a system for capacity enhancing of the teachers in vocational didactics.

The modules have been developed jointly with the teaching staff of the Dresden Technical University and covered the following topics:

- Labour market-oriented action
- Modern methods of training
- Selection and development of training and learning tools
- Monitoring and evaluation of the learning performance

- Models in vocational education
- Progressive crop production technologies (special didactics for the agricultural sector).

Each module lasts for 36–72 h and can be considered as a separate unit in the didactic system of the vocational pedagogy, or the modules can be used in various combinations and thus form a training course for the trainees according to their personal needs. This approach provides flexibility in qualification upgrading and is a good precondition for forming a system of the continued development of the teaching staff.

The modules developed are incorporated in the professional development system and hence provide the professional training of the teachers of vocational schools. This is especially important for the initial vocational education system, as 60% of the teachers and masters do not have the basic education in the field of professional didactics.

It should be noted that to a certain point, the established qualification upgrading practice was a chaotic and fragmentary structured system and almost was not able to meet both the needs of the education system and a teacher. Introduction of the modules developed allowed to overcome the existing situation and to provide greater susceptibility of the educational environment to the individual needs of consumers of educational services and the changing public needs in quality of the modern education.

During the 2 years of implementation of these modules, a total of 264 teachers of the vocational education system have taken the training courses. The teaching employees have the opportunity to take the training modules on personal demand, at a convenient time and in the convenient form of training.

The analysis showed that the most requested module for teaching staff is a module about the modern educational technology, the main objective of which is to increase the effectiveness of training and to optimize educational process in connection with the modernization of education. It puts forward new demands for training of a subject teacher, brings forth new problems, makes to master new technologies and to create new teaching methodologies based on the use of modern information learning environment. It is necessary to form a motivation for learning and purposeful cognitive activity. The active use of the modern technical media of teaching is not a privilege of an individual teacher. The technical media of teaching are becoming an integral part of the learning process everywhere, where the enthusiastic teachers exist and where the learning process has become a creative work (Gulina 2012).

In the module, “Selection and development training and learning tools”, trainees (methodologists, deputy directors on educational-methodical work and production, teachers and masters of the production training) of the professional development courses get acquainted with the principles of the development of study guides and teaching aids to be used for lessons. Focusing on the development of technical media of teaching (TMT) is based on the student-centred approach and visualization of the materials for students. The teachers need to learn the skills on how to

design lessons step-by-step, with the use of modern teaching and learning tools. At the same time along with learning on how to create a link to the subject, they learn how to create a link to the situation of the modern labour and business process, as well as to the processes and methods of production as the training and learning tools are oriented to the specific professional activities (Kruglikov 2005).

After studying Module 3, the participants of the qualification development courses will have the following competencies:

- Develop various teaching aids and study guides according to the principles of the proper graphic design.
- Develop the targeted training and learning tools and methods to be used for lessons, in particular, to distinguish what different didactic functions, such as information, formulation of the problem, etc., are performed by the technical media of teaching.
- In the professional development courses, trainees work in groups and support each other while applying the modern training and learning tools that have links to the subject knowledge and work processes.
- Know how to use the potential of the digital training and learning tools while performing the training and work assignments.
- Duration of the module makes 72 h overall (2 weeks).
- Theoretical classes: 48 h (8 days, 6 h per day)
- Practical phase: 24 h (in the practical phase it will be applied teaching and learning tools and methods, which were developed at the workshops during the theoretical or practical courses).

### 12.3 Conclusions

The use of technical media of teaching in the process of training skilled workers and mid-level professionals is of paramount importance, since without them, it is impossible to master the general and professional knowledge and to form effectively their practical skills and abilities. That is why the solution to the problem of effective use of the technical media of teaching is one of the urgent tasks of professional pedagogy.

In addition, in the conditions of implementation of the modules, as the system of a continuous education, the competences of a worker of the education system are gradually forming and developing in the following areas:

- Designing a pedagogical situation, pedagogical process and pedagogical system
- The positive positioning of himself/herself, as a professional, as well as own educational establishment in the market of educational services, both by the manager and the teacher
- The effective interaction of the teacher with the colleagues, as well as the effective cooperation between educational institutions and social partners.

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