Introduction

This methodology reveals the issues regarding the design and development of the curriculum of vocational teacher qualification improvement (further – the curriculum). The methodology is based on a process approach, and it covers general processes of a broad-based nature that could be used as a jumping-off having started the design and development of the curriculum. The methodology is essentially based on the recommendations of the Bologna declaration (1999) and where possible - supported by scientific findings. The methodology does not aim to solve country specific issues related to this process nor the content of the curriculum, and these peculiarities could be revealed in the forthcoming publications intending to cover specificity issues. Design and development of the curriculum are considered as processes of the same logic, therefore they are analysed and presented together. Moreover, the logic of the curriculum is analogous both for the acquisition and improvement of qualification, consequently the methodology can be applied both in initial and in-service education of vocational teachers. The methodology consists of four parts, glossary and list of references.

Part I

Includes the principles that reveal the basis of the methodology. It gives the explanations of the assumptions grounding the curriculum:

1. Study outcomes based curriculum. The main issues of the theory are introduced with the emphasis on intended study outcomes in terms of competencies that are a starting point to design and develop the curriculum.
2. Modular approach. The composition of the curriculum with separate modules is revealed as significant for individual needs due to flexibility of studies, economy of time and financial reasons.
3. Process approach. The substance of the methodology is seen within the procedures of the curriculum design and development. The whole of the procedures is presented.
4. Stakeholder participation. Different groups of stakeholders are identified, and the importance of their role in the curriculum design and development is explained.
5. Periodic renewal. The necessity to regularly evaluate and improve the curriculum is emphasised. The sequence of the renewal process is discussed.
6. Orientation to practice. It is explained how the curriculum design and development are based on the possibility to apply them easily in tutor's work. Moreover, the curriculum design and development are related to practice through study outcomes, which are identified with stakeholders' assistance or using the teacher profession standard if it is available.

Part II

Describes the four procedures that compose the curriculum design and development:

1. Description of the tasks and roles of vocational teachers. It is explained that tasks and roles come from a teacher professional standard or they are identified by research results with stakeholders' assistance.
2. Definition of competencies and study outcomes. It is discussed how to describe statements saying what students should be able to do at the end of their studies.
3. Identification of assessment criteria of student achievements. The purpose of those criteria is presented, and their peculiarities are introduced.
4. Designing of the study programme structure and content. The main elements of the study programme are discussed and the most significant issues of the content are mentioned.

Part III

Presents the main actors participating in the curriculum design and development as well as explains their specific roles.

The functions of the following actors are discussed:

1. Internal stakeholders – tutors and other university teachers (further – teachers) as well as students, i.e. vocational teachers with the intention to improve their qualification or prospective vocational teachers.
2. External stakeholders – graduates, employers, representatives of professional associations, governmental institutions, trade unions, etc.

Part IV

Suggests that quality assurance of the curriculum could be performed by the four stage quality cycle:

1. Planning. The process of the curriculum design is summarised.
2. Implementation. The main issues of the curriculum realisation are revealed.
3. Evaluation. The stages of the curriculum evaluation are presented with the emphasis to reveal strengths and weaknesses of the curriculum.
4. Review. It is suggested how to use the results of evaluation in order to improve the quality of the curriculum.

Study outcomes based curriculum is a leading approach in the methodology. It has been chosen seeing the importance of the intended study outcomes for:

- The logic of the design and development of the curriculum.

- Assessment of student achievements.

- Assurance of quality and standards in institutions for vocational teacher education.

Development of national and international systems for vocational teacher education. Glossary defines the key concepts related to the design and development of the curriculum. The list of references presents the resources of literature used in the methodology.

The methodology is targeted for those designing and developing the curriculum, vocational teachers, and other participants in vocational education and training.

I. Principles

The Methodology has been grounded on the following six principles:

1. Study outcomes based curriculum.
2. Modular approach.
3. Process approach.
4. Stakeholder participation.
5. Periodic renewal.
6. Orientation to practice.

The most important principle defining the Methodology presents the assumption of study outcomes based curriculum. Modular and process approaches, stakeholder participation, periodic renewal and orientation to practice are the supporting principles.

Principle 1: Study Outcomes Based Curriculum

Curriculum is a system of integral parts such as study outcomes, criteria of assessment of student achievements, study content, study forms and methods, study environment, requirements for teachers and students, etc. Intended study outcomes are an essential element, and their importance in the curriculum design and development can be revealed by the following issues:

Study outcomes determine the logics of the curriculum, they influence the description and sequence of all other elements.

The clearly defined study outcomes make it easier to understand the curriculum, its realisation, evaluation and review.

Study outcomes are derived from competencies, and this peculiarity makes them crucial in the creation of the system of easily comparable qualifications and diploma recognition. It is also an essential assumption for the development of a common European higher education area.

Study outcomes demonstrate whether the curriculum is related to the labour market needs, and they reveal the level of the cooperation between the academic community and external stakeholders.

The priority to study outcomes is frequently described as a new approach to studying and teaching where active studying (constructivist) ideas are supported (*The shift to learning outcomes*, 2008). This approach implies the following peculiarities of the study process:

- students build up their own meanings, based on what they already know;
- different students may give different interpretations to the same thing;
- there are many ways through which students can study;
- studying is a social activity;
- studying is dynamic and context depended.

A new approach involves the shift from an input-focused to an output-focused approach in which study outcomes play a central role. "The traditional input-related curriculum has proved to be too focused on the teacher instead of the learner. This change has been associated with a need for improvement in curriculum design, and an acknowledgement that more effective and varied learning styles benefit the learner. This has strengthened the need to express, through the medium of learning outcomes, the knowledge, understanding, competences and other attributes within qualifications" (Adam S., 2008; p. 12). Following this approach, teachers become facilitators of the studying process since much of this process takes place outside the university without a teacher present. Meanwhile, students get actively involved in the planning and management of their own studying, and take more responsibility in the study process.

Study outcomes reflect requirements for students to be met at the end of a successful study process, and they are defined through the system of competencies to be acquired. Competencies could be referred as the world of work category and study outcomes – an academic category. First of all, competencies should be described by external stakeholders who know well the demands of the labour market. Study outcomes are defined by representatives of an academic community, on the basis of the described competencies. Competencies are abilities of a person to solve a problem in an *unpredictable* (in real labour market) situation (Pukelis K., Navickienė L.; 2008). Study outcomes, as well as competencies,

are abilities of students to solve problems, but differently from competencies, study outcomes are related to *predictable* (educational) situations. Predictable situations mean that students know in advance the field from which they could be tested during the exams, but they do not have concrete information on the type of the assignment they will be asked to perform during the assessment process of their achievements. Predictable situations also mean that students may be tested only on the issues from the field they have studied directly or indirectly during the study process.

Any competency consists of *knowledge, ability, value and attitude*. The structure of the study outcome is the same as that of the competency (Fig. 1). The quality of knowledge, ability, value and attitude determines the *level* of autonomy and responsibility of a person (i.e. his/her competence). Knowledge and ability are described in terms of autonomy, whereas values and attitudes are related to responsibility.

A clear and exact definition of study outcomes ensures the coherence of study modules or subjects, allows reveal the overlapping of competencies that are acquired in different study modules or subjects, and facilitates the curriculum design, realisation and development. Study outcomes reflect an essential relationship among teaching, studying (learning) and assessment. Teachers find study outcomes as statements indicating what knowledge, skills, understanding and values should be provided for students, what study and assessment methods could be used (Pukelis K., Pileicikiene N., 2005; Adam S., 2004). For students, study outcomes give directions to design their studying with regard to the competencies they should acquire after the completion of studies.

The definition of study outcomes on the basis of competencies determines the identification and assessment of professional standards and qualifications, as well as gives possibilities for the comparability and recognition of different qualification standards. In this way study outcomes become the most important criterion in developing and assessing standards on the national and international levels (Pukelis K., Pileicikiene N.; 2005). Moreover, they determine the growth of student mobility, facilitate the recognition of diplomas and qualifications, and improve the transparency of the provided qualifications. Thus, the implementation of a credit system is facilitated and opportunities to organise studies in different study forms are created (Adam S., 2004). On the international level, study outcomes become the crucial factor for the recognition of qualifications and diploma as this recognition mostly depends on qualitative criteria, includingknowledge, abilities, attitudes and values. Study outcomes could facilitate the elimination of significant differences in similar study programmes, regarding the acquired competencies, across Europe.

Study outcomes are the linking element among all the parameters of the curriculum, and they start the chain of parameters: study outcomes – assessment of student achievements – study objectives – teaching and studying. If the first element of this chain is well defined, the rest of them could also be successfully completed, and if the beginning is false, the remaining elements become inaccurate.

The concepts of study outcomes, objectives and student achievements are often mixed and even used interchangeably, however, they are different in definitions and meaning (Pukelis K., Pileicikiene N., 2005; Adam S., 2004). Study objectives are the purposes which need to be achieved during a certain part of study period. Study outcomes are objective requirements of the society and the world of work for student achievements as a result of studies that form the basis for the qualification recognition. Student achievements are a subjective part of study outcomes, and they can exceed the defined study outcomes (competencies) or can come short, as they are consequences of many factors such as student efforts in studies, aptitude, abilities, teacher qualification, material and financial resources of the institution, etc. The achievement of study outcomes is a minimal but necessary study objective. In the curriculum design and development, first, study outcomes should be defined and only then study objectives as well as criteria for student achievements can be identified.

Study outcomes could be divided into different types. There exist outcomes related to the study programme (or degree level outcomes) and those related to separate study modules or subjects. Statements belonging to the first group of study outcomes are large outcomes, and the others are small outcomes.

The division of outcomes into programme/degree-related and module/subject-related is essential, and further it is possible to make another grouping. "The most common sub-divisions are between subject specific outcomes that relate to the subject discipline and the knowledge and/or skills particular to it, and generic (sometimes called transferable or transversal skills) outcomes that relate to any and all disciplines, e.g. communication and teamwork skills" (Adam S., 2008; p. 15).

Study outcomes could also be divided into 4 types as follows (McMahon T., Thakore H., 2006):

Those precise in context and relating to, relatively, uncontested concepts of skills or knowledge. For example: *describe the legislation covering vocational teacher qualification improvement in your country*.

Those relating to concepts, which are, by their very nature, imprecise (often because they relate to dynamic rather than static situations). For example: *describe effective teaching methods applied for learners in the institutions of vocational education and training*. In this example, the definition of "effective" is very much context-dependant.

Those, which are, by their very nature, contested. For example: *conceptualise and formulate new criteria for learner assessment in the institutions of vocational education and training*. In this example, it is a matter of opinion to explain what constitutes "new".

Those which are both imprecise and contested. For example: suggest the most appropriate test for a given studying situation. In this example, what constitutes "most appropriate" is imprecise, context-related and contestable.

McMahon T. and Thakore H. (2006), referring to other authors, say the combination of the above mentioned "different types of outcomes is essential if individuals are to develop the tacit knowledge necessary to underpin expertise – whether professional or academic or both" (p. 13).

Principle 2: Modular Approach

The curriculum for qualification improvement usually consists of separate modules leading to the development of vocational teacher competencies. In initial teacher education, study subjects as curriculum units are often included, however they start to yield to the composition of modules. The modular approach allows meet individual needs related to the development of competencies. Vocational teachers can choose only those modules of the curriculum that are necessary for their qualification improvement, and they do not need to be involved in those that do not seem relevant for them. Each module defines intended study outcomes, and they reveal competencies to be developed.

Principle 3: Process Approach

Process approach is grounded on a series of procedures composing the design and development of the curriculum. These procedures can be universal and applicable in any country or institution, whereas the subject-matter part is different everywhere. The procedures start with the description of the tasks and roles of vocational teachers, then the definition of competencies and study outcomes, afterwards the identification of assessment criteria of student achievements is given, and finally the designing of the study programme structure and content is carried. A more detailed description of the sequence of integral

procedures of the curriculum design and development is presented in Part II of the methodology.

Principle 4: Stakeholder Participation

Various stakeholders should participate in the curriculum design and development. Stakeholders are persons or their groups, interested in the quality of graduates prepared in a certain study programme. The following groups belong to stakeholders: academic and administrative staff of the institution, students, their parents, graduates, employers, representatives of professional associations, governmental institutions, trade unions, and etc.

Stakeholder participation is usually initiated by the teachers delivering the curriculum. The role of stakeholders is crucial in the curriculum design and development. They identify competencies that are necessary for vocational teachers, and these competencies become the basis for the definition of study outcomes. Stakeholders also suggest how the curriculum design and development could be improved. Different roles of stakeholders are specified in Part III of the methodology.

Principle 5: Periodic Renewal

The curriculum should undergo periodic renewal, and it is necessary to set regular intervals for its revision. The curriculum renewal could be performed through evaluation and improvement.

The evaluation of the curriculum should be distinguished by utility, feasibility, propriety and accuracy (The Program Evaluation Standards/ http://www.wmich.edu/evalctr/jc). Evaluation is utilised when the obtained results are used by certain groups of people. Before the evaluation, the groups interested in the research findings are identified, the questions they are concerned with are verbalised, the necessary information is collected, the revealed facts are presented in a comprehensive way and they reach stakeholders. The feasibility principle means that the evaluation is performed with regard to the real situation, including precaution, diplomacy and using resources rationally. Evaluation is proper if it is performed legally, keeping to the ethical norms and human rights with regard to the involved people. Accurate evaluation follows the predetermined goals and procedures, the right information resources are used, reliable information is collected, right and unbiased conclusions are formulated.

The evaluation results show strengths and weaknesses of the curriculum, and its improvement includes the enhancement of the identified strengths as well as the elimination

of the discovered weaknesses. The process of the curriculum renewal is specified in Part IV of the methodology under the description of quality assurance.

Principle 6: Orientation to Practice

The curriculum design and development are practice-oriented if they are easily applied in tutor's work. Clearly described procedures of the design and development as well as identified groups of stakeholders make the process more applicable. The focus at study outcomes in each phase of the design and development provides opportunities for a consecutive and naturally applied process.

Moreover, the curriculum design and development are related to practice through the participation of stakeholders. They identify competencies that reveal the needs of labour market, and their practical suggestions make the basis for the definition of study outcomes.

PROCEDURES

Qualification is a composition of knowledge, skills, values and attitudes (i.e. competencies), enabling effective delivery of theoretical and (or) practical vocational education and training. It means competencies are constituents of qualification, and qualification improvement should be based on the development of competencies. Vocational teacher qualification improvement is a life-long process aiming at the conformation to technical, technological, social and other changes (Lauzackas R., Dienys V.; 2004) as well as the growth of competencies composing didactic and subject qualifications