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METHODOLOGY FOR THE CURRICULUM OF VOCATIONAL TEACHER QUALIFICATION IMPROVEMENT

CONTENTS

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.
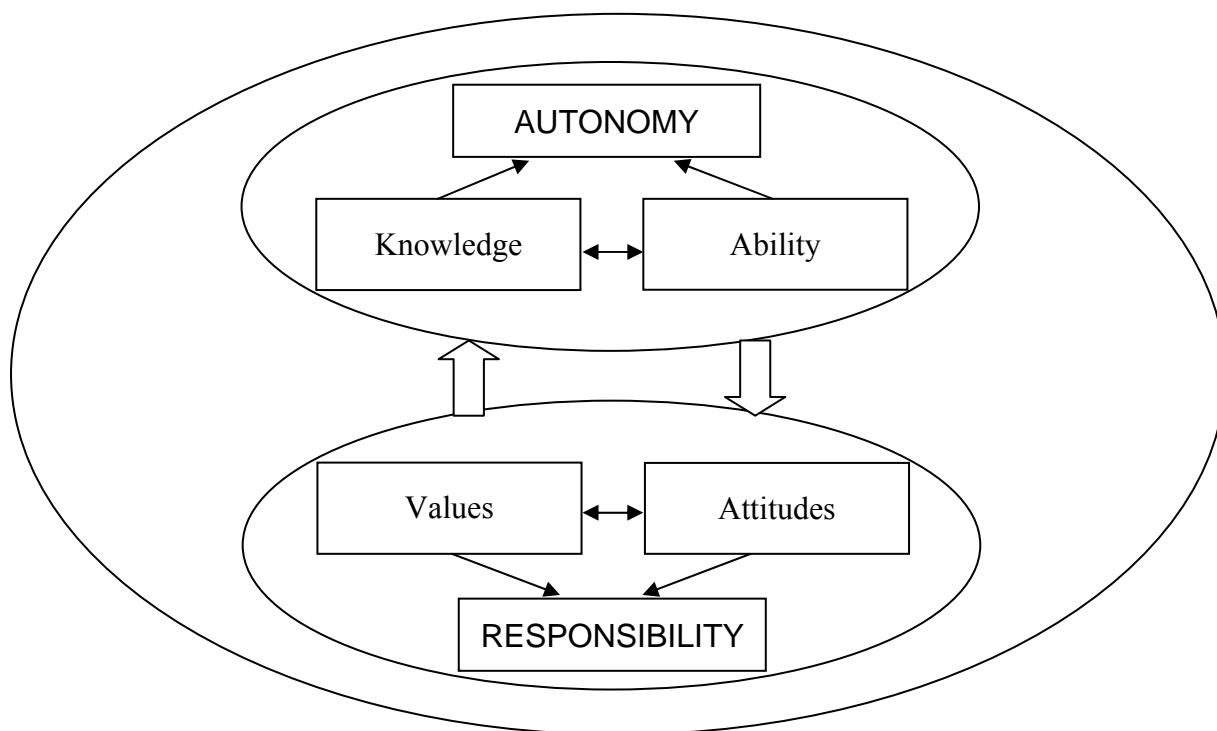
Fig. 1. Structure of competency and study outcome
(adapted from Pukelis K., Navickienė L.; 2008)

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, including

knowledge, 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):

1. 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*.

2.   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.

3.   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".

4.   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.

II. Procedures

Vocational teacher qualification is a system of didactical and subject qualifications influenced by personal qualities of an individual teacher (Fig. 2). 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.
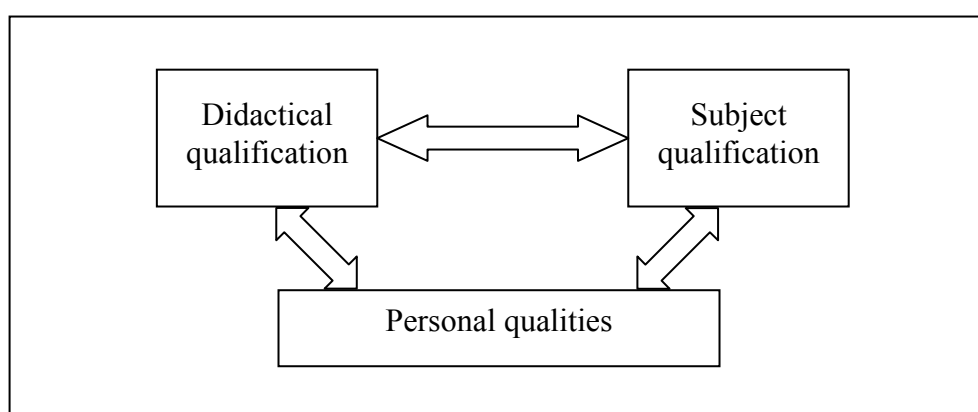

Fig. 2. Structure of vocational teacher qualification
(adapted from Pukelis K., Fokiene A.; 2008)

The curriculum of vocational teacher qualification improvement is as a system of integral parts such as the intended study outcomes derived from competencies, the applied study materials, forms and methods, the created environment for studies, requirements for teachers working in the curriculum and enrolled students (i.e. vocational teachers with the intention to improve their qualification or prospective vocational teachers), etc. The adjustment of any of the integral parts influences the change of the other ones.

The design and development of the curriculum should be well grounded, properly organised and structured of logically sequential stages as follows:

-        Description of the tasks and roles of vocational teachers.

-        Definition of competencies and study outcomes.

-        Identification of assessment criteria of student achievements.

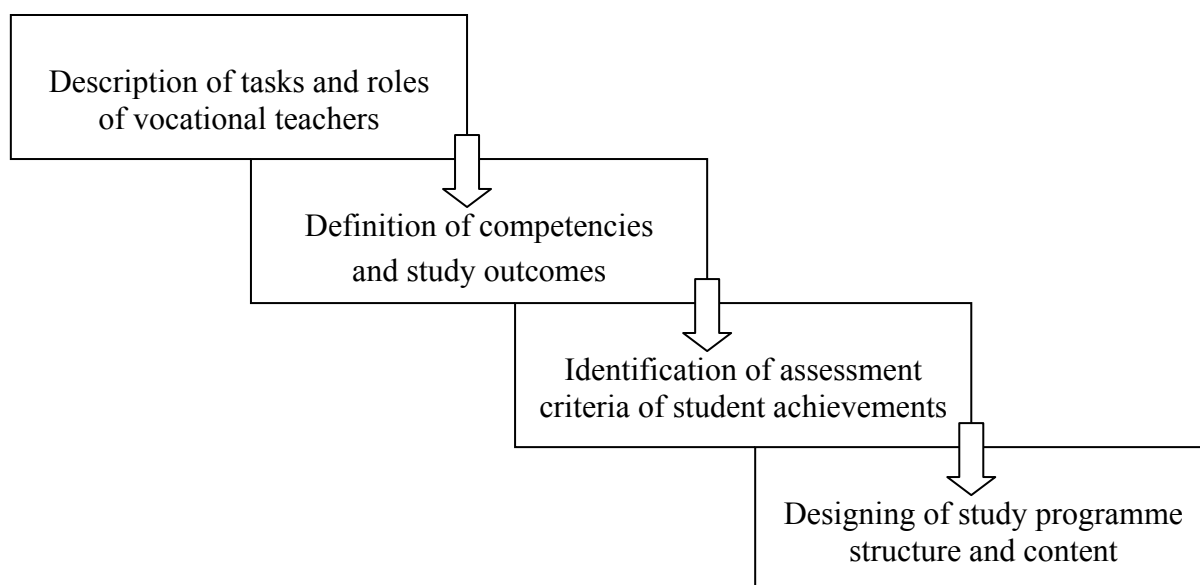-   Designing of the study programme structure and content (Fig. 3).

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┌─────────────────────────┐
│  Description of tasks    │
│  and roles of           │
│  vocational teachers     │
└─────────────────────────┘
         │
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    ┌──────────────────────────┐
    │ Definition of            │
    │ competencies and         │
    │ study outcomes           │
    └──────────────────────────┘
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        │ Identification of        │
        │ assessment criteria of   │
        │ student achievements     │
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            ┌──────────────────────────┐
            │ Designing of study       │
            │ programme structure      │
            │ and content              │
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Fig. 3. Procedures of curriculum design and development (Savickiene I., 2008)

Description of the tasks and roles of vocational teachers

The tasks and roles of vocational teachers could be defined in a teacher professional standard, qualification framework or job profile. In case there is no agreed national definition of tasks and roles, they should be identified by activity research. It is a combination of theoretical and empirical research with the analysis of the related national and international documents as well as interviews with stakeholders to find out their viewpoints towards the examined issue.

Possible tasks and roles of vocational teachers could be as follows:

- Preparation and development of teaching plans and vocational teaching programmes, preparation of study modules according to the requirements.

- Delivery of lectures and supervision of student activities in the classroom.

- Preparation of tasks and assignments.

- Running and supervising the practical studying of students.

- Preparation and organization of examinations.

- Preparation of reports on students' work and progress and discussing them with other teachers and external stakeholders.

- Participation in school meetings and debates on teaching and organizational issues.

- Organizing and facilitating extracurricular activities of students.

- Individual teaching, fulfilling various tasks.

Definition of competencies and study outcomes

Competencies are defined by tutors, teachers and external stakeholders suggesting knowledge, skills, values and attitudes to be possessed by vocational teachers. Study outcomes are based on the definition of competencies, and they are formulated by tutors and teachers. Study outcomes are a fundamental issue in the curriculum design and development. They determine how the objectives of the study programme and its modules or subjects will be formulated, what sequence of study modules or subjects will be set, which study methods and means will be chosen to achieve study objectives, what duration of studies will be optimal, which criteria and methods of student achievements will be applied, etc. If each element of the curriculum is grounded on clearly defined study outcomes, studies should help students to develop the identified abilities.

Outcomes related to the entire study programme (study outcomes at degree level) are of a rather large scope, and they should be divided into smaller ones. The latter outcomes determine the competencies to be acquired in different study modules or subjects, and they could be called study module/subject-related outcomes. When all the small outcomes are integrated, they compose the whole of large study outcomes referred to the entire study programme. The relationship between large and small study outcomes is illustrated in Fig 4.

Large study outcomes: outcomes related to the study programme (degree level outcomes)

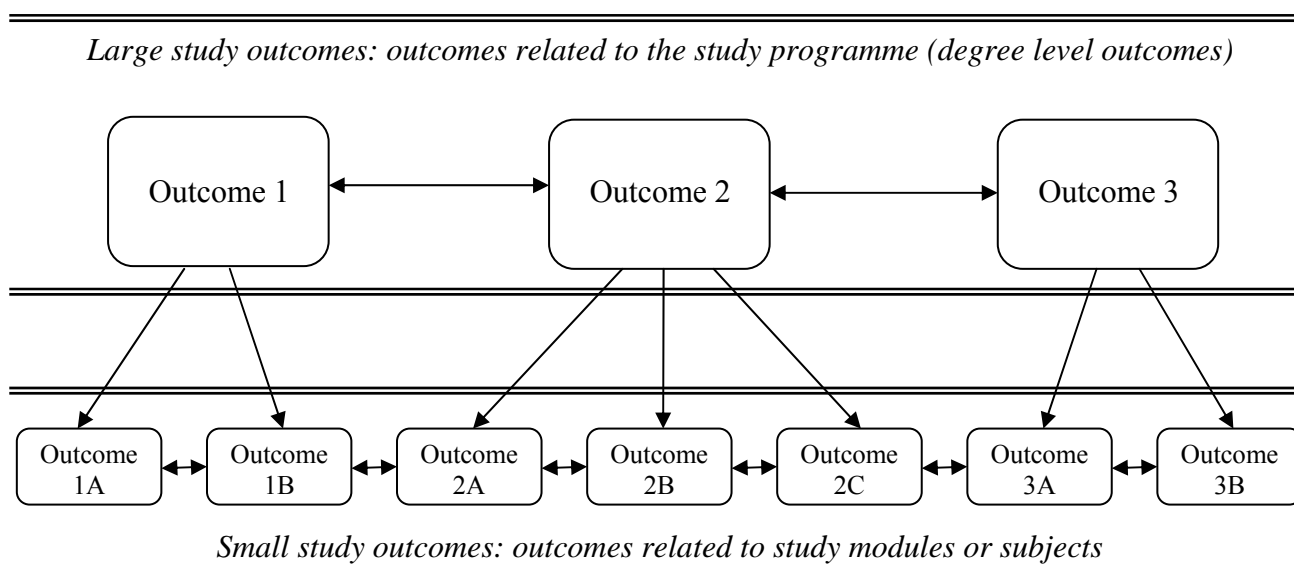*Small study outcomes: outcomes related to study modules or subjects*

Fig 4. Relationship between large and small study outcomes (Savickiene I., 2008)

The identification of small study outcomes is essential because of several reasons. First of all, large outcomes do not say in detail what exactly students should study. Then, large outcomes show abilities to perform relevant activities and tasks, but they usually do not include didactic elements. Whereas, small outcomes could give details on the information, study methods, means or

tasks to achieve them. Moreover, small outcomes are the only source to identify criteria and tasks for the assessment of student achievements in separate study modules or subjects (*Methodology of Master Study Programme Designing*, 2008).

The identification of study outcomes is a challenging task for curriculum developers where different classifications of outcomes could be used. The most consecutive and commonly used method to conceptualise study outcomes is B. Bloom's taxonomy (1975). B. Bloom, his co-workers and followers have specified cognitive, affective and psychomotor domains. "The cognitive relates to mental skills, or knowledge. The affective relates to feelings, attitudes and emotional aspects of learning. Psychomotor skills refer to manual, dexterous and physical skills" (*The shift to learning outcomes*, 2008; p. 23).

The cognitive domain includes the levels of studying in the following hierarchy:

1. Knowledge – the ability to recall or remember facts without necessarily understanding them.

2. Comprehension – the ability to understand and interpret learned information.

3. Application – the ability to use learned material in new situations, e.g. put ideas and concepts to work in solving problems.

4. Analysis – the ability to break down information into its components, e.g. look for inter-relationships and ideas (understanding of organisational structure).

5. Synthesis – the ability to put parts together.

6. Evaluation – the ability to judge the value of material for a given purpose.

The affective domain covers issues relating to the emotional component of studies and ranges from basic willingness to receive information to the integration of beliefs, ideas and attitudes (Krathwohl D. R., 2002; Kennedy D., Hyland A., Ryan N.; 2006):

1. Receiving – refers to a willingness to receive information.

2. Responding – refers to the individual actively participating in his or her own learning.

3. Valuing – ranges from simple acceptance of a value to one of commitment.

4. Organisation – refers to the process that individuals go through as they bring together different values, resolve conflicts among them and start to internalise the values.

5. Characterisation – at this level the individual has a value system in terms of their beliefs, ideas and attitudes that control their behaviour in a consistent and predictable manner.

The psychomotor domain "has been less well developed in the field of education than either the cognitive or affective domain. The psychomotor domain is commonly used in areas like laboratory science subjects, health sciences, art, music, engineering, drama and physical education"

(Kennedy D., Hyland A., Ryan N.; 2006, p. 15). This domain could consist of seven levels presented by Simpson E. (1972):

1. Perception – the ability to use observed cues to guide physical activity.

2. Set (mindset) – the readiness to take a particular course of action.

3. Guided response – the trial-an-error attempts at acquiring a physical skill.

4. Mechanism – the intermediate stage in learning a physical skill.

5. Complex overt responses – physical activities involving complex movement patterns are possible.

6. Adaptation – at this level, skills are well developed and the individual can modify movements to deal with problem situations or to fit special requirements.

7. Origination – the skills are so highly developed that creativity for special situations is possible.

The domains composing Bloom's taxonomy and giving the foundation for the definition of study outcomes are presented in Fig. 5.

6. Evaluation 5. Synthesis 4. Analysis 3. Application 2. Comprehension 1. Knowledge	5. Characterisation 4. Organisation 3. Valuing 2. Responding 1. Receiving	7. Origination 6. Adaptation 5. Complex overt responses 4. Mechanism 3. Guided response 2. Set (mindset) 1. Perception
Cognitive domain (Bloom B. S., 1956)	Affective domain (Krathwohl D. R., 2002)	Psychomotor domain (Simpson E., 1972)

Fig. 5. Cognitive, affective and psychomotor domains

Most of study outcomes refer to the cognitive domain. Following it, study outcomes are usually expressed by the use of active verbs. Accurately defined study outcomes should be described by the words that: a) indicate what students will be able to perform having successfully completed the studies; b) indicate specific means students will be able to work with and the situations where they will work in; c) define the necessary activity method which could demonstrate what students have achieved upon completion of the studies (Moon J., 2002).

The verbs to define study outcomes could be as follows:

- for knowledge – define, list, duplicate, state, quote, count, repeat, tell;

- for comprehension – explain, classify, describe, recognise, calculate, review, interpret;

- for application – apply, adjust, change, demonstrate, find, construct, solve;

- for analysis – analyse, compare, distinguish, group, relate, prove, dispute, criticise;

- for synthesis – assemble, construct, plan, formulate, generalise, integrate, propose, reform;

- for evaluation – appraise, argue, predict, evaluate, reason, suggest, recommend, etc.

The process of study outcome definition could be summarised in 4 steps (*Methodology of Master Study Programme Designing*, 2008):

- To divide large study outcomes into small ones answering what competencies should be acquired by students.

- To ground all the large and small outcomes on the same taxonomy; for example, Bloom's cognitive taxonomy.

- To compose the definition of outcome of 3 parts: 1) an active verb in the form of an infinitive, 2) an object specifying what should be done and 3) the context describing the conditions under which the task should be carried. For example: to define (1) an educational institution (2) as an organisation providing services (3).

- To group all the outcomes according to the same classification system. For example, to group them into knowledge, skills and social competencies (*The European Qualification Framework for Lifelong Learning*, 2008).

Identification of assessment criteria of student achievements

Identification of student achievements' assessment criteria, methods and tools is based on study outcomes. When study outcomes are precisely and clearly defined, they create assumptions to better understand what competencies should be acquired and how the assessment methodology for student achievements should be designed. The achievement of one study outcome could be based on one or several assessment criteria. The relationship between study outcomes and assessment criteria of student achievements is illustrated in Fig. 6.

Assessment criteria of student achievements should meet specific requirements. As it has been mentioned above, they must be related to study outcomes. Moreover, criteria should be valid, credible, explicit both to teachers and students, equal for all the participants involved in the same

study modules or subject. Such parameters provide possibilities for the transparency of assessment and make it more unbiased.

Study outcomes	Assessment criteria
Outcome *No1*.	Criterion *No1.1*. Criterion *No1.2*. Criterion *No1.3*.
Outcome *No2*.	Criterion *No2.1*.
Outcome *No3*.	Criterion *No3.1*. Criterion *No3.2*.

Fig. 6. Relationship between study outcomes and assessment criteria of student achievements (adapted from Methodology of Master Study Programme Designing, 2008)

The criteria become the basis for the formulation of examination or other tasks which are necessary to make conclusions about the level of student achievements. The achieved level could be measured according to a specific assessment scale; for example, *ten point* or *A – F scale*.

The assessment methodology should be presented to students at the beginning of the studies. For this purpose, an introductory study programme course could be organised to discuss with students all the parameters of the curriculum.

Designing of the study programme structure and content

First of all, the structure and content of the study programme should meet formal institutional, national and international requirements set in the related documents. They could regulate the length of the programme, the duration or number of separate study subjects in a semester, key competencies to be acquired by students, the qualification of teachers and material resources necessary to realise the programme.

The structure of the programme should be based on a logic relationship among its elements: study modules or subjects correspond to study outcomes and objectives; the sequence of study subjects is coherent, valid and based on clear principles of curriculum design and development; the length of the programme and modules or subjects is optimal to achieve study outcomes; etc.

Besides, the programme should be flexible so that to allow students make some choices meeting their study needs.

The content of the programme should reflect the novelties in vocational education and training as well as in teacher education. It is necessary to use recent printed material and update electronic resources to cover modern theories, the latest research results, actualities in the field and examples of various practises.

Successful realisation of the programme content much depends on the teacher qualification. Teachers should be qualified to assist students in the achievement of study results with regard to the modules or subjects delivered. Teachers should perform research related to the modules or subjects they realise as well as improve qualification regarding their field of work.

The study programme should provide the application of appropriate study methods and forms. They should correspond both to study outcomes and the content of study modules or subjects as well as allow reveal and develop individual abilities of students.

Material resources need to be sufficient and appropriate for the programme content realisation. The number of classrooms, their equipment, workplaces in the library, books and other reading resources should be enough compared to the number of students. Accommodation should be convenient for participants, information and communication technologies should meet teachers' and students' needs.

III. Actors

The participation of various stakeholder groups in the curriculum design and development ensures a close relationship between study outcomes and the labour market needs, a proper choice of resources necessary for studies, the increase of the graduate employability and the competitiveness of the study programme. Their participation contributes to a more precise identification and relation of study outcomes with competencies relevant for the future professional activity. Thus, the core parameters of the curriculum design, realisation and development, assessment of student achievements as well as recognition of the acquired qualifications become of higher quality.

The main actors participating in the curriculum design and development are as follows (Fig. 7):

- Internal stakeholders – tutors and other teachers, students (i.e. vocational teachers with the intention to improve their qualification or prospective vocational teachers).

- External stakeholders – employers, graduates and representatives of different institutions (professional associations, governmental institutions, trade unions, etc.).
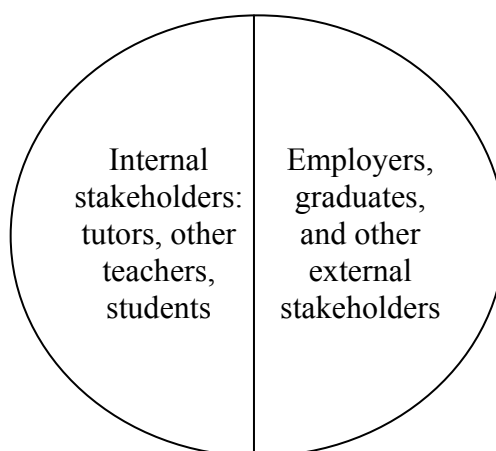

Fig. 7. The main actors in the curriculum design and development (Savickiene I., 2008)

The definition of competencies that ground study outcomes is, first of all, the prerogative of external stakeholders, i.e. employers and graduates, representatives of professional associations and trade unions, as well as politicians since they not only finance studies but, as consumers, are also interested in the quality of the trained specialists. The participation of external stakeholders in the curriculum design and development is significant because it reduces the gap between study outcomes and the demands of the world of work, increases the perspectives of graduates to enter the labour market (Pukelis K., Pileicikiene N., 2005). The contribution of external stakeholders in the

curriculum design and development strengthens the overall cooperation of higher education institutions with the representatives of the world of work and other interested society groups.

External stakeholders should participate in all the processes of the curriculum design and development. They should be inquired when the tasks and roles of vocational teachers are discussed to find out their classification and description of tasks and roles. External stakeholders are asked to define competencies that are relevant for vocational teachers, and this definition is the basis for the description of study outcomes. Representatives of the higher education institution together with stakeholders review study outcomes which later become a standard in the assessment of student achievements and recognition of their qualification. Through the participation in the work of the study programme committee, external stakeholders influence the designing of the study programme structure and content, help to organize placements for practice of vocational teachers. Later, they appear in the assessment of student achievements, i.e. participate in (prospective) vocational teachers' examinations and revise their final works.

The role of tutors is undoubtedly important in the curriculum design and development. They manage the whole process and become responsible for it, provide the supervision of practical realisation of a theoretical study process, encourage programme teachers by providing advice and consultations. Tutors initiate the cooperation with stakeholders, organise their inquiries, and apply the results in the curriculum design and development. Other teachers delivering the curriculum assist tutors, and they become participants in all the stages of the curriculum design and development

Students are the ones who give the feedback on the curriculum implementation and influence its design and development. They could express their opinion on the assessment criteria of student achievements as well as on the structure and content of the study programme. Students' question and suggestions could be useful for tutors and teachers in the curriculum development.

Stakeholders' participation in the specific phases of the curriculum design and development is presented in Fig. 8.
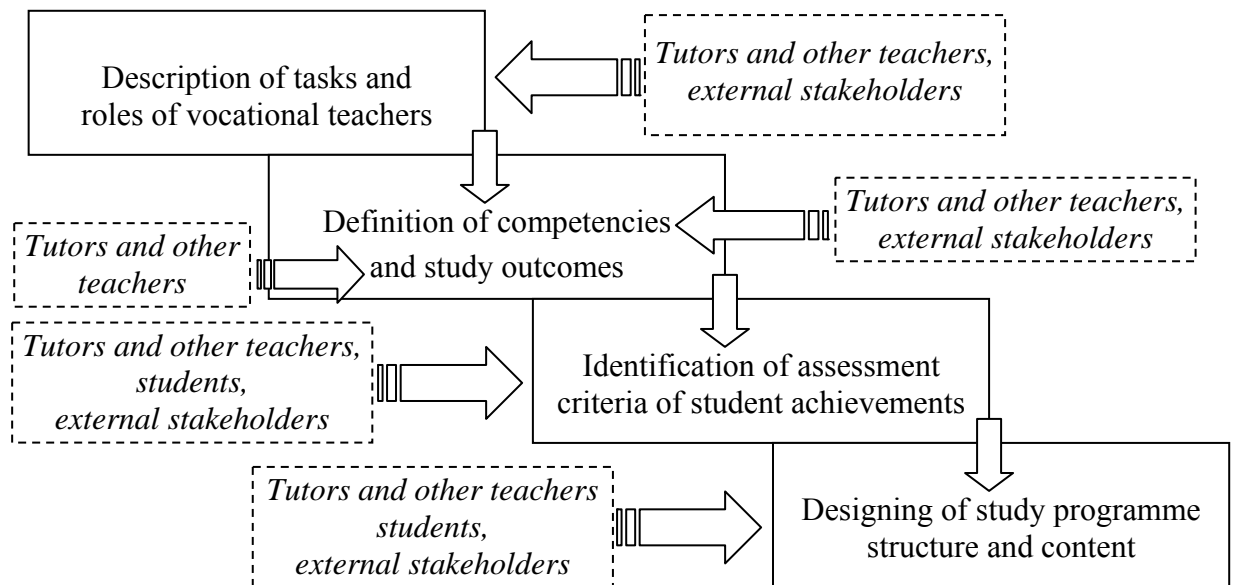
Fig. 8. Stakeholders' participation in curriculum design and development (Savickiene I., 2008)

Stakeholders' contribution to the identification of study outcomes is vital for higher schools, but the participation in this process could also be useful for stakeholders themselves. For example, national and local policy-makers could use study outcomes in multiple ways: setting objectives for lifelong learning, developing a qualification framework or quality assurance system, steering the reform of key aspects of qualifications, curriculum or assessment, etc. Employers receive the benefit when new recruits come with competencies acquired following the accurate study outcomes identified with employer assistance.

Stakeholders' involvement in the process of curriculum design and development could consist of the following tasks:

- To identify groups of stakeholders related to vocational teacher qualification improvement.

- To define specific functions of different groups of stakeholders.

- To describe methods used to gather information on stakeholders' views.

- To determine ways how to meet and agree on different views.

Stakeholders' involvement is a problem of a deeper consideration and should be solved in methodologies revealing this issue.

IV. Quality Assurance

The quality of the curriculum could be assured following the Quality Assurance Model, which has been presented in *Fundamentals of a "Common Quality Assurance Framework" (CQAF) for VET in Europe* (2005; further – CQAF[*]) with the adaptation of the classical Deming Quality Improvement Cycle (Plan–Do–Check–Act). The Model includes 4 phases – *planning, implementation, evaluation* and *review* – and *methodology,* linking all the phases of the quality cycle (Fig. 9).
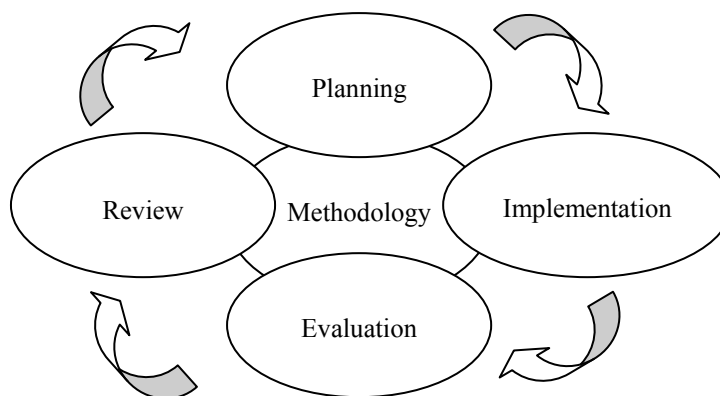

Fig. 9. Quality Assurance Model (adapted from CQAF, 2005)

Methodology is an element of the quality assurance model that deals with the following aspects: what are the assumptions to ground planning, implementation, evaluation and review of the curriculum; what stakeholders expect and how they are involved into the quality assurance process; what methods are used for data collection and analysis; how internal and external quality assurance procedures are correlated, etc.

The methodology of the curriculum quality assurance is built on study outcomes based curriculum, modular and process approaches, stakeholder participation, periodical renewal and orientation to practice.

Planning is the process of the curriculum design. To ensure the planning of high quality, the design process should include the four stages that have been discussed above, in Part III when describing the procedures of the curriculum design and development:

- ‑ Description of the tasks and roles of vocational teachers.

- ‑ Definition of competencies and study outcomes.

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[*] CQAF has been developed in the implementation of the Copenhagen Process initiatives intended to improve VET quality on the pan-European level and to develop a common understanding of quality, thus facilitating the involvement of all stakeholders into quality assurance activities and good practice sharing.

- Identification of assessment criteria of student achievements.

- Designing of the study programme structure and content.

Stages of the curriculum planning with the examples related to vocational teacher activities are presented in Fig. 10.

No	Tasks and roles of vocational teachers	Study outcomes	Assessment criteria of student achievements	Content of studies (study modules or subjects)
1.	Assessment of teaching programmes	1. To apply assessment criteria of teaching programmes and modules or subjects. 2. Identify the relationship among the main parameters of teaching programmes.	1. The list of validated assessment criteria for the chosen teaching programme and modules or subjects. 2. The described differences between the main parameters of teaching programmes and modules or subjects. 3. The validated method of the application of assessment criteria in the assessment of teaching programmes and modules or subjects.	1. Curriculum design. 2. Assessment methodology of educational quality

Fig. 10. Examples of curriculum planning issues
(adapted from *Methodology of Master Study Programme Designing*, 2008)

Implementation phase covers the realisation of the curriculum. The quality of the realisation could be assured by the following actions:

- Perform effective management of study resources – intellectual, material and financial resources. The qualification of staff members should be appropriate to achieve study outcomes. The variety and number of rooms, equipment, books, etc. need to correspond to studying and lecturing needs. Financial resources should be sufficient to obtain the necessary equipment and publications, to make payment for staff.

- Maintain cooperative external relationships. Students and teachers should be active participants in external cooperation, and apply the gained experience in the study process. The relationships with other than academic institutions should be fostered as well.

- Apply appropriate student admission requirements. They should conform to the defined study outcomes, minimum and specific requirements could be separately defined so that to

- Perform effective support for students. Students should be provided with sufficient information on the parameters of the study programme (especially, about intended study outcomes) and its realisation as well as other information related to studies, have good possibilities to be counselled by teachers and administrative staff, have opportunities in the choice of study modules or subjects and study forms, be provided with financial, psychological, health and cultural support.

- Implement quality assurance of the curriculum. Quality assurance procedures should be clearly specified, evaluation criteria be transparent, evaluation of the curriculum performed periodically, evaluation results applied to improve the quality of the curriculum, all the stakeholders participate in the quality process.

The *evaluation* of the curriculum is making the judgement on the quality of the curriculum with regard to the results of the performed assessment. Evaluation includes assessment, and it is a cyclic process. Assessment involves data gathering, systematisation and analysis with the intention to make a judgement on the quality of the curriculum. The whole process starts with the definition of evaluation goals, areas, criteria and indicators. Then, possible information resources are stated, assessment methods and tools selected or developed. Afterwards, the relevant data are gathered, analysed and systematised. Finally, strengths and weaknesses of the curriculum are identified, and they allow make decisions on the quality (Fig. 11).
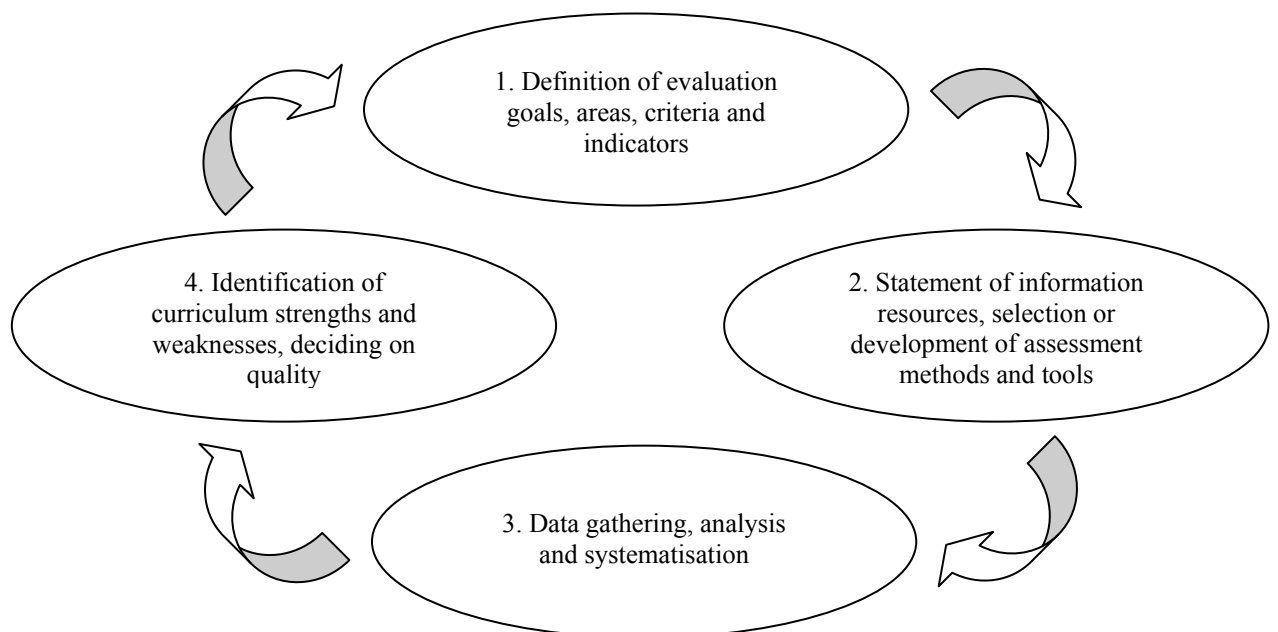

Fig. 11. Cycle of curriculum evaluation (Savickiene I., 2008)

Review completes the quality cycle. Its primary purpose is to ensure that results obtained in the evaluation phase are appropriately reflected in the follow-up process that will give a start to a new quality cycle. The defined strengths of the curriculum should be further enhanced, whereas the weaknesses need deeper analysis to identify their causes. Having defined those causes, it will be possible to take actions to eliminate shortcomings. It is essential that all the stakeholders participate in this process. It is not enough to share responsibility for separate teachers so that they would take care for the quality of some curriculum elements and evade the improvement of others. All the groups of stakeholders should be involved in the discussion of the evaluation results and participate in further improvements.

Glossary

Competence is the demonstration of an effective and qualitative activity, which meets the requirements of the world of work. Competence is determined by the level of qualification and professional experience the person posses as well as competencies acquired via formal, non-formal and informal learning. Competence is demonstrated in unpredictable situations.

Competency is an ability of a person to perform a certain task of an activity on the grounds of the acquired knowledge, skills, values and attitudes. The combination of certain competencies composes qualification. Competency is demonstrated in unpredictable situations.

Curriculum is as 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. The adjustment of any of the integral parts influences the change of the other ones.

Curriculum design and development encompasses four procedures: (1) description of the tasks and roles of vocational teachers, (2) definition of competencies and study outcomes, (3) identification of assessment criteria of student achievements, (4) designing of the study programme structure and content.

Evaluation of curriculum is making the judgement on the quality of the curriculum with regard to the results of the performed assessment. Evaluation includes assessment, and it is a cyclic process. Assessment involves data gathering, systematisation and analysis with the intention to make a judgement on the quality of the curriculum.

External stakeholders include graduates, employers, representatives of professional associations, governmental institutions, trade unions, and etc.

Internal stakeholders include academic and administrative staff of the institution as well as students.

Outcomes cased curriculum is grounded on intended study outcomes declaring requirements for students. They are described in terms of competencies that are a starting point to design and develop the curriculum. It is an alternative approach to goal/input based curriculum.

Qualification is a composition of competencies enabling a person to act effectively in a certain profession. Qualification means fulfilled requirements of an occupational standard. Qualification is awarded by state authorized institutions.

Quality assurance of curriculum is performed following the model of five elements: four phases – planning, implementation, evaluation and review – as well as methodology, linking all the phases.

Stakeholders are persons or their groups, interested in the quality of graduates, and are able to influence the training process of prospective specialists or the improvement of their qualification.

Student achievements are student's knowledge, skills and values, acquired during the study process and could be named as subjective study outcomes. After the comparison of student's study achievements against the defined study outcomes, the judgment on the achievements is expressed by a score, letter, rating and so on.

Study outcomes are statements of what a student knows understands and is able to do after the completions of studies. Study outcomes are defined in terms of competencies, and they reveal objective societal and vocational requirements. They are often called learning outcomes, however, in the context of higher education, study outcomes are a more precise definition. Study outcomes are demonstrated in predictable situations.

Studying is a self-directed learning including the performance of research.

Study programme is a short, structured and coherent description of theoretical and practical elements of the curriculum that make an entity leading to a certain qualification. It is the description of study outcomes, objectives, content, methods, tools, material and human resources (to be) employed.

Tutor is one of the actors in vocational teacher education who works at university in the field of vocational teacher education (both initial and in-service training), is responsible for the design and development as well as implementation of the vocational teachers' education programme (in an academic perspective) and education process at university, provides the supervision of practical realisation of a theoretical study process, encourages programme teachers by providing advice and consultations.

Vocational teacher is a person delivering theoretical and (or) practical vocational education and training.

Vocational teacher qualification is a system of didactical and subject qualifications. Didactical qualification includes competencies related to designing, realisation and development of teaching module/subject (or programme). Subject qualification includes competencies related to a certain vocation.

Vocational teacher qualification improvement is a life-long process aiming at the growth of didactic and subject qualifications with regard to technical, technological, social and other changes.

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