

MINISTRY OF EDUCATION, YOUTH AND SPORT  
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# NATIONAL QUALIFICATIONS FRAMEWORK FOR TERTIARY EDUCATION IN THE CZECH REPUBLIC



**P**ART 3



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INVESTMENTS IN EDUCATION DEVELOPMENT

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This document was compiled in cooperation with the entire Q-RAM research team: the “Experience of Educational Institutions” section summarizes the experience of expert teams of university and college teachers. Based on the experience, the Q-RAM expert team formulated three sections of "Recommendations," which were subsequently revised and amended based on the comments of teachers from schools involved in the Q-RAM project and of defence experts from the Accreditation Commission, the Czech Rectors Conference, the Council of Higher Education Institutions and its Student Chamber, the Academy of Sciences of the Czech Republic, the Czech Chamber of Commerce, the Confederation of Industry and the National Institution of Technical and Vocational Education.



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# THE PURPOSE OF THE QUALIFICATIONS FRAMEWORK

Jiří Hnilica, Petr Pabian et al.



Mottos - Selected responses from schools that  
had the qualifications framework implemented:

"Easier orientation of employers, students and prospective students in the study fields." (VSB-TUO)



*"The overlapping of course contents is eliminated, the students' workload is reduced, and academics are given room for further education and research." (BUT)*

*"It helps eliminate redundant disciplines and, on the other hand, reinforce instruction where the requirements of the major programmes would be inadequately met." (UPOL)*

*"Thanks to our participation in the project we can have a deeper and more systematic analysis of the current status of teaching - that is, what the students should know and be able to do, how we transfer this knowledge, and how we verify they have the required competencies." (UK)*

*"We warn against the premature implementation of the Q-RAM ideas into an administrative and legislative form." (UK)*

The qualifications framework provides a method for describing the knowledge, skills and competencies of students and graduates of individual programmes and fields at universities and tertiary vocational schools by means of "learning outcomes". Additionally, it provides a minimum standard for each tertiary level qualification based on the actual skills of the graduates. As the experience of teachers from schools involved in the Q-RAM project indicates, the implementation of the qualifications framework facilitates expert discussion on the actual quality of education, not the fulfilment of formal requirements.

In accordance with the requirements of the qualification framework, schools introducing the qualifications framework must describe their programmes/fields with learning outcomes and set processes for the programme/field management within the particular school so that the relationship between the declared learning outcomes, the selected educational methods and the verification of achieved learning outcomes can be effectively managed.

This publication has been compiled to serve as an instruction manual for the qualifications framework

designed to help you take full advantage of the potential benefits and minimize any possible problems and negative impacts. This document is based on the practical experience of over 400 teachers from 19 faculties of public universities, one private university, and four tertiary vocational schools, which participated in 2011 in the pilot implementation of the qualifications framework in their programmes, and also on the experience from seminars in 2012 in which these teachers passed on their experience to teachers from other schools.

The acquired experience shows that learning outcomes provide prospective students, current students and employers with clear data about what knowledge, skills and competencies the particular programme actually develops (and also about the differences between the programmes of different schools). Based on a joint expert discussion, the learning outcomes enable teachers, for example, to improve the consistency of individual courses in the curriculum. It is necessary, however, to avoid the risk of administrative formalism by simply filling out forms, as well as the risk of the unification of various programmes.

This publication summarizes the acquired experience and the resulting recommendations in two main parts. Comprised of three chapters, Section One lists recommendations for three different target groups. The first chapter concerns the use and support of the qualifications framework in education policy and is primarily intended for the Ministry of Education, Youth and Sports of the Czech Republic and for school representations (1.1 Recommendation for Education Policy: How to Introduce, Promote and Utilise *the National Qualifications Framework*). The second chapter concerns the implementation of the qualifications framework at universities and tertiary vocational schools and is primarily intended for the members of school management (Recommendation for School Management: Tertiary Education Institutions and Implementation of the National Qualifications Framework of Tertiary Education). The last chapter is concerned with the development and use of learning outcomes in specific study programmes, fields and their complete components (e.g. courses), and is therefore intended primarily for teachers (Recommendation for Teachers: How to Write Learning Outcomes for Study Fields and Courses). Section Two contains a more detailed overview of the specific experience of schools with the implementation of the qualifications framework within the Q-RAM project and is split into two areas. The first area summarizes the experience of the Q-RAM research team. The introductory chapter presents the main benefits and problems associated with the implementation of the qualifications framework at the participating schools (What Benefits and Problems to Expect). The next chapter of this section (Experience from Educational Seminars) summarizes experience from seminars held for university and tertiary vocational school teachers, while the last chapter is dedicated to the connection between the implementation of the qualifications framework, the introduction of the credit system and the efforts to obtain the ECTS Label (Qualifications Framework and ECTS: How They Correspond). The other area then provides a colourful summary of the very diverse experiences of thirteen universities and tertiary vocational schools.

## BASIC PRINCIPLES OF THE QUALIFICATIONS FRAMEWORK

The purpose of the qualifications framework is to clearly and demonstrably describe and thus enable the control of what skills the graduates of tertiary education institutions truly have. Proper introduction thereof requires the description of



1. learning outcomes, i.e. field-specific knowledge and skills, as well as the general competencies that graduates achieve on completion of their study programme,
2. learning outcomes that students acquire within their study responsibilities (e.g. courses)

so that items 1 and 2 form a consistent whole, i.e. individual study requirements (item 2) truly provide the graduate's profile (item 1) and that the graduate's profile is truly accomplished through the study requirements described above.

We would now like to point out a few facts that proved to be important for the decision on the introduction and use of the qualifications framework:

1. *The qualifications framework ultimately represents a fairly radical change in thinking about the educational process.*

The concern is students – the knowledge, skills and general competencies they demonstrably acquire during the learning process in order to achieve the particular qualification and be prepared for a profession. The focus is not the contents of the curriculum, i.e. the view of the teacher (teacher-centred learning), but what the graduates (who completed the programme and, naturally, the courses) are required to know (student-centred learning).

2. *The implementation of the qualifications framework is a long-term process.*

Foreign experience, but also the results of the pilot implementation in selected schools in the Czech Republic, indicate that consistent and responsible implementation of the qualifications framework may be possible within the next 5 to 10 years and that regular updates of the system will still be necessary. For this reason it is impossible that the qualifications framework would be implemented in full in the Czech Republic within a shorter period of time. It is, however, very important to start this process, coordinate its course and continuously evaluate it.

3. *Without intensive and personal communication between the parties involved in the introduction of the qualifications framework, it cannot be successfully utilized.*

Experience with the pilot testing of the qualifications framework reveals that the main problem of its introduction is a breakdown in communication between the parties concerned. Teachers in particular often lack relevant information about the nature and purposes of the qualifications framework and therefore find it difficult to evaluate their role in its implementation.

4. *It is impossible to introduce the qualifications framework without clearly declared support from the management of the relevant institution.*

If the qualifications framework is to truly contribute to the quality management of educational processes, it must receive clearly declared support from the school or faculty management. The process will be gain legitimacy and generally greater attention.

5. *Rather than introducing the qualifications framework in a purely administrative or formal way, it is better not to introduce it at all.*

If the introduction of the qualifications framework is approached in a purely formal way, the description of the graduate profile will become perfunctory and the focus on learning outcomes will not be reflected in processes which ensure the quality and transparency of

the educational process in the tertiary education institution (e.g. methods of training and evaluating students, evaluation of the quality of study programmes or procedures for recognition of prior learning); in this case it is preferable not to introduce the qualifications framework at all. It will be seen as yet another completely useless, meaningless administrative burden and not as an effective tool for quality management.

If a tertiary education institution decides to introduce the qualifications framework to clearly and demonstrably describe (and hence subsequently also manage) what skills the graduates should truly have, it is necessary, while creating its graduate profile, for the institution to distinguish between the individual parts of the national qualifications framework and their functions:

1. At the most general level, requirements concerning the graduates of various tertiary education levels are described in the form of anticipated knowledge, skills and general competencies that the graduates of educational cycles (esp. bachelor's, master's and doctoral programmes) have regardless of the focus of their field; this is a general definition of the minimum standard within individual educational cycles (national descriptors).

*Source publication:*

*National Qualifications Framework for Tertiary Education, Part 1. National Descriptors*

2. Subsequently, learning outcomes typical for the subject areas are described more specifically; it is a definition of typical knowledge, skills and general competencies of graduates in broader field-specific subject areas.

*Source publication:*

*National Qualifications Framework for Tertiary Education, Part 2. Subject Areas*

3. The last general level leads to the actual description of the learning outcomes of the gra-

duates of individual fields of study at tertiary education institutions; this graduate profile must meet the requirements defined by national descriptors and be integrated in the subject area system, which is the essential guide for the field-related specifics of study programmes.

# THE PURPOSE OF THE QUALIFICATIONS FRAMEWORK

Based on these defined levels, distinguishing three levels in the implementation of the qualifications framework appears to be purposeful. This finding led to the three different recommendations listed above:

- *Recommendation for Education Policy: How to Introduce, Promote and Utilise the National Qualifications Framework;*
- *Recommendation for School Management: Tertiary Education Institutions and the Implementation of the National Qualifications Framework;*
- *Recommendation for Teachers: How to Write Learning Outcomes for Study Fields and Courses.*

Recommendation for Education Policy proposes the definition of the legal basis for the qualifications framework, its obligatory force, forms, management, room for amendments, and provision of its support. Recommendation for Education Policy thus attempts to provide systematic support for the introduction and proper use of the qualifications framework at the most general level. It is therefore obvious that the main addressee of this Recommendation is the Ministry of Education, Youth and Sports, which oversees and manages the Czech educational system. However, although the legislative basis and management of the national qualifications framework lies primarily in the hands of the MEYS, the MEYS cannot act fully independently of the other interest groups (especially the Accreditation Commission and academic representation). For this reason, the education policy recommendations are, of course, also intended for tertiary education institutions and other bodies that have an impact on the process of tertiary education in the Czech Republic.

The other two recommendations are based primarily on the experience with the pilot implementation of the National Qualifications Framework, and the end users are primarily tertiary education institutions, i.e. universities and tertiary vocational schools:

- *Recommendation for School Management* specifies the recommendation for tertiary education institutions concerning the implementation of the qualifications framework.
- *Recommendation for Teachers* deals with learning outcomes and is designed to help those who will write learning outcomes at the level of fields of study and individual courses.

It should be emphasized that both these recommendations, designed especially for tertiary education institutions, are very closely interlinked. Recommendation for School Management aims at helping create a suitable environment for the implementation of the qualifications framework across the whole institution. Recommendation for Teachers is designed primarily as a practical tool for the development of learning outcomes at the level of programmes, fields, courses, etc.

Section Two of this document summarizes both the experience of the tertiary education institutions that participated in the pilot testing of the qualifications framework and the experience of seminars that we held together with these institutions for other interested parties from academia, as well as other stakeholders. Those with direct experience with the pilot implementation of the qualifications framework at their institution give the following reasons in particular for the implementation of the qualifications framework:

- The concept of the programme/field and relevant courses was clarified and specified in detail;
- Overlaps, gaps and links in the curricula of the fields were identified;
- Clear information for prospective students, current students, teachers, graduates and employers was created;
- The cohesion of the concept allowed for easy comparison with the national standard, subject areas and other schools, while also confirming the uniqueness of the field;
- The concept of individual lessons on the course and individual tasks in the classes and self-study was clarified and specified with the help of learning outcomes;
- Workload related to meeting study requirements was clarified;
- The gradation of the learning outcomes allowed for the distinction of qualifications scales in courses;
- Recognition of prior learning improved for the transition to a higher education level – for the transfer from another school, student mobility, from work or from various other forms of informal education;

- Learning outcomes interlinked with education methods and the evaluation of students.

As mentioned above, the purpose of the qualifications framework is to clearly and demonstrably describe what skills the graduates of tertiary education institutions should truly possess. The principal prerequisite necessary for the graduates to truly acquire the knowledge, skills and general competencies described in the graduate profile is a process of constructive alignment of the educational objectives with the teaching and learning methods and the methods used for result assessment

The aspects of managing this key process in tertiary education are addressed in the national project *Quality Enforcement and Assessment in the Tertiary Education System* (IPn QUALITY), which has been carried out by the MEYS since 2011. This project takes over the requirements for the learning outcomes of tertiary education graduates from the Q-RAM project, putting them into the wider context of quality management by means of constructive alignment.

We would like to draw attention and refer to the QUALITY project here, as it complements the Q-RAM project, which was aimed "only" at creating a qualifications framework.

# SUGGESTED ADDITIONAL RESOURCES FOR THE INTRODUCTION OF THE QUALIFICATIONS FRAMEWORK

## ON QUALIFICATIONS FRAMEWORKS IN GENERAL

ALLAIS, Stephanie; RAFFE, David; YOUNG, Michael: *Researching NQFs: some conceptual issues* (Geneva: International Labour Office - Skills and Employability Department, 2009).

Studies dealing with general issues related to qualifications frameworks, for example the distinction between two types of qualifications frameworks: the first one aims at education reform, while the other more at making the existing system of education more transparent.

BERGAN, Sjur: *Qualifications. Introduction to a Concept* (Strasbourg: Council of Europe, 2007)

A basic theoretical study on qualifications and qualifications frameworks, with particular emphasis on the importance of these issues in the European Higher Education Area.

YOUNG, Michael M.; ALLAIS, Stephanie M. (eds.): "Special issue on qualifications frameworks," *Journal of Education and Work* 24 (2011), No. 3-4, 209-448.

A special double issue of the journal containing 13 critical studies from an international project that compared experience with the implementation of the framework in 16 countries around the world. One of the general studies is dedicated to the relevance of qualifications frameworks in the current development of the global economy.

## IMPLEMENTING THE QUALIFICATIONS FRAMEWORK IN THE EDUCATION POLICY

ALLAIS, Stephanie: *The implementation and impact of national qualifications frameworks:*



*report of a study in 16 countries* (Geneva: International Labour Office - Skills and Employability Department, 2010).

Based on years of research, the study analyzes, for example, the reasons for the introduction of qualifications framework in different countries, and, above all, their actual impact. It concludes with a warning that problems in implementation may mean that the qualifications framework will not have the desired benefit.

European Centre for the Development of Vocational Training (Cedefop): *Development of national qualifications frameworks in Europe* (Luxembourg: Publications Office of the European Union, 2012).

A detailed description of the current status of the development and implementation of qualifications frameworks in 34 European countries (including the Czech Republic). While more comprehensive than previous studies, it is not based on research but only on information from individual countries. As a result, it does not provide any significant conclusions (except that frameworks are being introduced everywhere).

CHAKROUN, Borhene: "National Qualification Frameworks: from policy borrowing to policy learning," *European Journal of Education* 45 (2010), No. 2, 199-216.

The analysis concludes that the framework and its implementation processes cannot be adopted from other countries; it is always necessary to develop a tailored version. In addition, it argues that the pedagogical potential of learning outcomes can be fully utilized only when closely interlinked with education and evaluation methods.

KARSETH, Berit; SOLBREKKE, Tone Dyrdal: "Qualifications frameworks: the avenue towards the convergence of European higher education?" *European Journal of Education* 45 (2010), No. 4, 563-576.

The study shows different goals that each country associates with the introduction of a qualifications framework and the resulting problems in trying to make the qualifications frameworks into the common "language" of the European Higher Education Area. It also analyzes the power relations of the implementation of qualifications frameworks.

RAUHVARERS, Andrejs: "Recognition and qualifications frameworks," *Assessment in Education: Principles, Policy & Practice*. 16 (2009), No. 1, 111-125.

A study by a leading European expert (and defence expert of the Q-RAM project) on one of the most important contexts of qualifications frameworks: the recognition of qualifications acquired in various countries of the European Higher Education Area.

SAROYAN, Alenoush; FRENAY, Mariane (eds.): *Building teaching capacities in higher education: a comprehensive international model* (Sterling: Stylus, 2010).

An inspiration for the proposal that suggests it is necessary to support the implementation of learning outcomes in schools (along with education and evaluation methods). The comparative study of teacher-support systems in four European countries and in Canada leads to a more general model of support of educational processes in schools.

SOUTO-OTERO, Manuel (ed.): "Special Issue: Making learning visible or making knowledge

# 1 RECOMMENDATION FOR THE INTRODUCTION OF THE QUALIFICATIONS FRAMEWORK OF TERTIARY EDUCATION

## 1.1 RECOMMENDATION FOR EDUCATION POLICY: HOW TO INTRODUCE, PROMOTE AND UTILISE THE QUALIFICATIONS FRAMEWORK

Editors: Jiří Hnilica and Petr Pabian

### PURPOSE OF THE NATIONAL QUALIFICATIONS FRAMEWORK

The purpose of the National Qualifications Framework (NQF) is to describe in a common language the knowledge, skills and general competencies that students learn in programmes/fields of study and levels of study in tertiary education so that these are clear, transparent and comprehensible for all parties concerned (especially for prospective students, current students, universities and tertiary vocational schools, employers). As a starting point for the development of university programmes/fields and study fields of tertiary vocational schools, NQF helps ensure the quality of the qualifications provided, the basic parameters of which are (through NQF) established in advance.

NQF focuses only on the learning outcomes of a particular curriculum, i.e. what the expected knowledge, skills and general competencies of graduates are, thus respecting the unique path to achieving these learning outcomes at various universities and tertiary vocational schools, assuming this is permitted by the nature of the study field.

NQF is implemented chiefly for the following reasons:

- Experience with the implementation of the qualifications framework in various countries shows that it helps to focus on the curriculum instead of on the fulfilment of formal criteria, consequently leading to the improved quality of learning and its outcomes (countries with an implemented qualifications framework include Great Britain, Germany, the Netherlands, Norway, Denmark and Ireland, while non-European countries include Australia, New Zealand, South Africa and Hong Kong);
- Based on the commitments of the Czech Republic, resulting from the Bergen Communiqué of ministers responsible for higher education (a commitment arising from the Bergen Communiqué requires the existence of NQF and its "self-certifi-

cation" against the umbrella qualifications framework for the European Higher Education Area - QF-EHEA) and from the Recommendation of the European Parliament and of the Council of 23 April 2008.

Using the NQF as a common language to describe the knowledge, skills and general competencies will facilitate:

- streamlining the tertiary education system in the Czech Republic;
- improving the permeability of studies;
- improving conditions for international student mobility and graduate employability;
- making the comparison and transfer of degrees easier;
- providing a systematic tool for the development and evaluation of tertiary education programmes;
- providing a system tool for internal and external quality assurance.

It is important to emphasize that under no circumstances does the NQF seek to establish any standardization or unification of tertiary education. On the contrary, its universality enables each tertiary education institution to adopt a unique approach to creating educational processes, though always so that the generally accepted academic standards, defined by the qualifications framework, are observed and the general credibility of the whole tertiary education in the Czech Republic is reinforced.

NQF consists of two levels:

- A. The minimum standard of the learning outcomes of the qualification levels of tertiary education (national descriptors) ,
- B. Descriptions of typical learning outcomes in 39 broadly defined subject areas (education descriptors). The subject areas are defined so as to span content-related study/education programmes.

*National descriptors define the structure of the qualifications system of the tertiary education system in the Czech Republic based on the classification of different types of qualifications against the QF EHEA (Qualifications Framework for the European Higher Education Area) cycles and EQF-LLL (European Qualifications Framework for Lifelong Learning) levels. Additionally, they specify the workload the ECTS sets as necessary to obtain different types of qualifications, and in particular through generically designated learning outcomes (specialized knowledge, specialized skills, general competencies) they clearly determine the difficulty level of mastering the individual types of qualifications. Closely tied to the types of study and education programmes that arise from applicable legislation, national descriptors determine the level of their intensity (for short-cycle programme, bachelor's study programme, master's study programme, and doctoral study programme) with the help of generally formulated learning outcomes.*

*Education descriptors indicate what range of the field-specific knowledge and skills is typically included in a study unit associated with the subject area, whether it is a programme/field that already exists or which is only being planned. Education descriptors do not describe any particular profile of a specific study unit (a programme, field, etc.), not even recommended descriptors; they do not*

aim at a detailed specification and national unification of the tertiary education curriculum. Education descriptors simply express the benchmark from which the outcomes of individual study programmes may deviate, provided the institution is able to justify it.

Apart from institutional and legislative anchoring, successful implementation of the qualifications framework requires the establishment of methods supporting its long-term implementation in schools. Without this support, the implementation of the qualifications framework would become administrative formalism that would not contribute anything positive to the quality of education.

## SCOPE OF THE NATIONAL QUALIFICATIONS FRAMEWORK

With regard to the development of political negotiations (preparation of a legislative draft of the Higher Education Act, the strategy of transformation and stabilization of the sector of tertiary vocational education) it can be estimated that compared to the original expectations, the short-cycle programmes (EQF 5) will probably only become established in tertiary vocational education.

The national qualifications framework would, among other things, serve as a tool integrating tertiary education as a legally undefined category including tertiary vocational education (EQF 5) and higher education (EQF 6 to 8).

## CURRENT LEGISLATION CONCERNING THE NATIONAL QUALIFICATIONS FRAMEWORK

There is currently no explicit legal basis for the qualifications framework. A general competency basis regarding the introduction of the national qualifications framework, however, may be attributed to the MEYS when we consider its authorization to make final decisions (following the issuance of an opinion of the relevant accreditation commission) on the accreditation of a TTS educational programme or a university study programme (i.e. on integrating the qualifications in the system) and to assess the fulfilment of the objectives and principles of law in the TTS educational programme (Art 105 (3) of Act No. 561/2004 Sb.) and the fulfilment of guarantees for due provision of university education (Art 79 (5) of Act No. 111/1998 Sb.). This approach was reflected in the Update of the 2012 MEYS Long-Term Plans; consequently, the MEYS undertook to recommend that the Accreditation Commission (university education) apply the qualifications framework (national descriptors) when evaluating study programmes. Pursuant to the current wording of Decree No. 42/1999 Sb. regulating the particulars of the request for accreditation of a study programme, Art 2 (1d), the application for accreditation must include the graduate profile of the study programme (or field of study), which includes both the definition of the output specialized knowledge and specialized skills corresponding to the objectives of the study programme.

Under the current legal regulation, the NQF legislation may be inferred on the same basis as in the case of the recommendation of the Accreditation Commission - as the declaration of a general recommendation which constitutes legitimate expectations of how, when exercising its jurisdiction, the MEYS will assess issues under its administrative discretion within the

statutory authorization. Under these conditions, the Minister's decision is a form of issuing the NQF; the document can be published in the MEYS Journal.

As the text above shows, the NQF can exist even without substantial modifications to the current legislation, as no law prohibits the development of a qualifications framework and the incorporation of qualifications therein based on specific criteria. If the Accreditation Commission adopts the NQF and begins applying it while accrediting and evaluating study or educational programmes, i.e. integrates the national descriptors and education descriptors among its requirements, these standards will become as binding as if stipulated by law. Likewise, nothing prevents universities, when preparing and evaluating study programmes and when assessing and validating learning outcomes, from falling back on clearly defined standards; on the contrary, academic freedoms guaranteed by the law allow them to do so fully.

The situation, however, does not preclude the possibility of the NQF becoming clearly anchored in law in the future. The anchoring of the NQF should proceed in steps and not directly by means of a detailed act. It is impossible to identify all the effects, impacts, and above all the responses of the entities concerned in advance even with thoroughly coherent proposals and measures.

## POSSIBLE FUTURE FORMS OF INCORPORATING THE NATIONAL QUALIFICATIONS FRAMEWORK INTO LAW

The national qualifications framework does not usually function as a legal regulation in other countries. Its existence (not the specific form) is, nevertheless, mentioned in the law, which charges an institution with its development and management. The wording of the qualifications framework is issued as a document by the relevant institution (most often ministries, agencies or authorities responsible for quality assurance in higher education). While developing the national qualifications frameworks, there was always a discussion held with all relevant partners, with the representatives of higher education institutions playing a prominent role.

Due to the ultimate responsibility of the MEYS for the education system in the Czech Republic, the MEYS should be the institution legally responsible for the creation, approval and publication of the NQF. The MEYS, however, does not need to manage the NQF itself. Apart from the MEYS, the law could delegate the application of the NQF to other entities that directly participate or will become involved in ensuring the quality of tertiary education. Given the current practice in the Czech Republic and the experience abroad, this should be an authority similar to the current Accreditation Commission.

The final legislation does not need to be fundamental and could, for example, consist of the fact that the relevant law will include a provision that the qualifications obtained in CR (and possibly abroad) are incorporated into the NQF, the development and maintenance of which are the responsibility of a particular authority. The existing acts that could be amended to provide legal basis for the NQF include:

- Act No. 111/1998 Coll. on higher education institutions and on changes and amendments to other acts (the Higher Education Act);
- Act No. 561/2004 Coll. on preschool, elementary, secondary, higher vocational and other education (the Education Act),

- Act No. 179/2006 Coll., on the recognition of further education results.

The necessary provisions in the law should affect the following:

- The existence of the NQF, its purpose and basic structure;
- Structuring the learning outcomes into specialized knowledge, specialized skills and general competencies;
- Authority (or authorities) authorized to approve the NQF;
- Method of publication (may vary for both sections of the NQF);
- Procedure for creating the NQF and its modifications (should vary for both parts of the NQF);
- Use of national descriptors in the creation, accreditation and evaluation of study programmes;
- Use of education descriptors.

Another option is to include the relevant provisions in the newly considered Tertiary Education Act and prepare a separate qualifications act, which, in addition to the National Register of Vocational Qualifications, would include the national qualifications framework and its possible components.

## POSSIBLE FUTURE FORMS OF THE MANAGEMENT OF THE NATIONAL QUALIFICATIONS FRAMEWORK

The management of the national qualifications framework should involve:

- decisions on its modifications;
- publication and interpretation (methodological support) of the qualifications framework;
- development and management of an expert network;
- ensuring the functions of referencing to multinational qualifications frameworks (only the MEYS is authorized to ensure these functions).

Due to the international obligations of the Czech Republic and to the position of the MEYS, it is recommended that the supreme decision-making body managing all the three sections be the MEYS. The management of the national qualifications framework should, however, be divided in accordance with the different functions that its individual sections are to fulfil:

1. national descriptors;

2. subject area system, description, and education descriptors;
3. development and management of a national network of experts.

## **1. NATIONAL DESCRIPTORS**

The MEYS should retain control over this most general section of the NQF, which is crucial (and also probably the most stable) in relation to the European qualifications frameworks.

At regular intervals (e.g. every five years), the MEYS will initiate a public consultation on the possible need for modifications. The right to initiate changes will also be had by authorities with which the changes to national descriptors are formally discussed:

- the accreditation authority (currently the Accreditation Commission);
- representatives from universities and tertiary vocational schools.

## **2. SYSTEM, DESCRIPTION, AND DESCRIPTORS OF THE SUBJECT AREAS**

The system, description and descriptors of the subject areas are not set once and for all; instead they must facilitate further development in line with changes within the academic disciplines and in accordance with the changing requirements of the external environment on tertiary education.

Due to their high number and likely changes, the system, descriptions and descriptors of the subject areas may be managed separately from the national descriptors and may even have a different form. Given the experience abroad, however, it is advisable to establish the current Accreditation Commission as the second most important authority following the MEYS to manage and publish the next levels of the NQF (or if there are legislative changes of the status quo, to establish a similar body to the Commission to supervise the quality of tertiary education). Another option is an analogy to the current permanent working groups of the Accreditation Commission, where similar groups would be set up for each subject area.

The initiation of change procedure should be set similar to that of national descriptors, i.e. at least once a pre-defined number of years (e.g. five years) the MEYS or the Accreditation Commission or academic representation will initiate a public consultation on the possible need for changes. It will, however, be possible to make partial revisions continuously. This principle will enable the emergence of new areas, the merging of the old, changes in their titles, etc. The basic principles for assessing the relevance of the changes include:

- proposals for new areas must demonstrate that the proposed subject area has sufficiently legitimate common ground for the emergence of a new area, which is supported by the authority of the academic community representatives in the area as well as external stakeholders;
- proposals clearly demonstrate in what aspects the current arrangement is unsatisfactory and to what extent it needs to be amended;
- in the case of the establishment of a new subject area, it is demonstrated that a solution could not be found by modifying the existing subject areas;



- proposals for adjustments prove to adequately reflect the views of all the major stakeholders in the subject area within the academic community (e.g. through dean associations, rectors conferences), the representation of universities and tertiary vocational schools as a whole (e.g. Czech Rectors Conference and Council of Higher Education Institutions), and the main external stakeholders concerned (e.g. professional chambers, social partners).

### 3. DEVELOPMENT AND MANAGEMENT OF A NATIONAL NETWORK OF EXPERTS

A national network of experts should be established as part of the MEYS to assist universities and tertiary vocational schools with the introduction and use of the qualifications framework. Only experts possessing direct experience with the introduction and use of the qualifications framework could qualify for the network. The experts would organize education seminars and directly assist individual institutions.

### SUPPORT FOR THE INTRODUCTION OF THE QUALIFICATIONS FRAMEWORK

Successful implementation of the qualifications framework requires not only a legislative framework but above all broad support for schools and their teachers. Experience from the pilot implementation of the qualifications framework showed that if this versatile and ongoing support is absent, counterproductive formal completion of the required fields is seen instead of improvements in the quality of education. We therefore summarize here what, based on the experience with the Q-RAM project, needs to be provided for the support of the implementation and how it can be carried out and funded. Maximum support should primarily be given to the description of learning outcomes (based on methodology developed in the Q-RAM project) together with the description of education and evaluation methods (based on methodology developed in IPN Quality).

Experience from the Q-RAM project indicates that there is a need to promote, on one hand, the infrastructure for the implementation of the qualifications framework at the national level (especially the expert network and information website) and, on the other hand, specific innovations of fields of study/programmes at universities and tertiary vocational schools (especially the establishment of implementation teams and descriptions of individual programmes/fields of study). Based on the acquired experience, the following text summarizes recommendations on what is necessary to support in order to implement the qualifications framework and what tools can be used.

### 1. SUPPORT OF NATIONAL INFRASTRUCTURE FOR THE INTRODUCTION OF THE QUALIFICATIONS FRAMEWORK

- **Expert Network:** The Q-RAM project proves that the introduction of the qualifications framework and learning outcomes require a major change in thinking about the educational process. Experience from schools and from seminars for teachers indicates that personal contact and exchange of practical experience are essential for the transfer and adoption of this approach. We therefore believe it is important to make use of the experience of the Q-RAM team and the implementation teams of the schools, which together organized the highly successful



final seminars. So far, only 357 university and TTS teachers have been able to utilize the experience unevenly in various subject areas. The resulting expert network could continue to mediate the acquired experience and could potentially also facilitate the implementation of the follow-up methodology of the IPN project Quality Concerning the Education and Evaluation Methods (and grow with the persons involved in this project). Specifically, this network that unites university and TTS teachers could serve in different subject areas to informally mediate the experience to schools that will be implementing learning outcomes, both directly through personal and informal contact and by organizing more seminars in the already established and tested format, this time, for example, directly in cooperation with specific schools. Furthermore, experience gained at selected pilot schools now shows that it will be useful in the future to consider holding follow-up seminars dedicated to the transfer of experience between schools that are already introducing learning outcomes.

- **Information Sharing Website:** Without diminishing the importance of personal communication, experience with the Q-RAM project showed that all relevant information and documents must be made available on a website. The existing Q-RAM website (<http://qram.reformy-msmt.cz/>) served the needs of the project well, but in order to support the introduction of the qualifications framework a new website must be set up and developed, which, in addition to the publication of methodological materials, will also provide contacts for the expert network and enable the continuous supplementation of experience and materials from other schools.
- **Possible Resources of Support of the Nationwide Expert Network and Information Website:** The key is of course the official endorsement of the expert network (while respecting its independence) by the most relevant stakeholders, in particular the Ministry of Education, Youth and Sport, Council of Higher Education Institutions and the Czech Rectors Conference. Financial support could flow, for example, from the MEYS centralized development programmes, provided that several universities endorse the formation of the network and the administration of its website in terms of organization and project development. Another option is to collaborate with the Czech team of Bologna Experts, especially in the organization of seminars on the implementation of learning outcomes. A future possible source of financial support is an IPN in the next programming period of structural funds, which would serve to implement the results of the existing IPNs for tertiary education. It is of course possible that such a network could give rise to an institutionalized nationwide network for the promotion of improvements in the quality of higher education (similar to for example the British Higher Education Academy).

## 2. SUPPORT OF THE IMPLEMENTATION OF THE QUALIFICATIONS FRAMEWORK AT UNIVERSITIES AND TTSS

- **Expert teams usually for every field of study/programme in schools:** When introducing the qualifications framework in the Q-RAM project, a three-member expert team funded from the project was usually established for every field of study/programme in schools. Experience from schools confirms that this model has proven successful both as a result of the sharing of expertise and communication within the expert team (as opposed to a single expert/guarantor) and its financial support, as efforts made by coordination significantly exceed the standard workload. Ideally, the core of these expert teams, i.e. several people in each subject area the school provides, should be given the opportunity to go through seminars or consultations within the national expert network. This core would then prepare a

sufficient number of experts for each field of study/programme at the school.

- **Support of Teachers in Describing the Individual Fields of Study/Programmes:** Learning outcomes (and the associated education and evaluation methods) of the individual fields of study/programmes and related courses can only be described by their teachers, as this is a specialized and creative task. This activity should receive appropriate methodological support, to be provided by the national expert network and its website. Experience of schools involved in the Q-RAM project, however, shows that even teachers find this activity highly time-consuming and therefore should be entitled to financial support.
- **Possible Sources of Support for the Implementation in Schools:** In the case of public universities, the support for the implementation of the qualifications framework could be included in institutional development plans, which are funded from the MEYS institutional development programme (especially activities leading to the preparation of the core expert teams in the subject areas). Another possible source is the Higher Education Development Fund projects (especially for the description of specific fields of study/programmes and related courses). In the longer term, we recommend that the introduction and use of the qualifications framework at universities and TTSs be supported with the resources of an operational programme focused on education in the next programming period of the structural funds. The introduction of learning outcomes and education and evaluation methods could also be supported partly with funds that are allocated in the budget of public universities to quality and performance indicators – mainly because the description of the programmes/fields of study is related to the quality of education far more than the vast majority of the existing indicators. In all cases of support for the implementation in the various study fields/programmes, however, evaluation mechanisms in the financial means must be utilised so that the support is not directed at formal descriptions; instead, they must be subjected to expert assessment. Another option is of course transforming the expert teams of the schools into institutionalized centres for the promotion of quality education (compare to faculty/staff development centres in English-speaking countries).

## 1.2 RECOMMENDATION FOR SCHOOL MANAGEMENT: TERTIARY EDUCATION

### INSTITUTIONS AND THE IMPLEMENTATION OF THE NATIONAL QUALIFICATIONS FRAMEWORK

editor: Iva Málková

#### REQUIREMENTS

1. The implementation of the National Qualifications Framework is related to the nature of the educational institutions and to the requirements of the description of the bachelor's, master's and doctoral study programme for accreditation purposes. Stemming from experience with the accreditation of institutions, study programmes and fields of study, the Framework amplifies it in the interdependence of the description of knowledge, skills and general competencies from individual courses to the programme and/or subject area.
2. The institution classifies its study programmes and fields under the subject area in which it will implement the education. In the context of the National Qualifications Framework and the description of the subject area, it creates/updates the description of the field of study with an emphasis on learning outcomes and the graduate profile.
3. In compliance with the amendment of Decree No. 42/1999 Sb., in accordance with the contents of the application for accreditation of a study programme classified under a subject area, the institution produces descriptions of study programmes, fields of study and courses in the terminology of learning outcomes using the descriptors of the National Qualifications Framework for Tertiary Education and the description of the relevant subject area.
4. When re-accrediting a study programme or field of study, the institution innovates/updates the descriptions of courses, study fields and study programmes so that the learning outcomes (knowledge, skills, general competencies) are linked and consistent with the National Qualifications Framework and the description of the subject area.
5. In preparing a new study programme accreditation, the institution profiles everything so that learning outcomes (knowledge, skills, general competencies) and the descriptions of courses, study fields and study programmes are linked and consistent with the National Qualifications Framework and descriptions in the subject area.
6. In relation to the other parts of the Recommendation, its second part provides tertiary education institutions with information and recommendations concerning the implementation of the National Qualifications Framework and descriptions in the subject area as they ensued from the initial implementation.

## GENERALIZATION OF THE IMPLEMENTATION EXPERIENCE

### 1. *Tertiary education institutions ("institutions") are defined by the Higher Education Act.*

An institution should have a clear role in the Czech/European area of tertiary education. It should define its mission, because clarifying its own profile in accordance with a long-term plan will help an early definition of which study programmes and fields (classified under the subject area) are and will remain characteristic of this institution.

An institution defines itself by identifying its prospects, classifying itself under subject areas in which the institution will accept the National Qualifications Framework (NQF) and the descriptions of the subject areas as binding.

The initial implementation demonstrated that it is necessary to define the whole implementation process at the beginning in relation to the NQF as well as to the nature of the institution, and that it is necessary (especially at the beginning of the implementation process) to find, even repeatedly, a uniform interpretation of all the concepts applied in the institution and to set up a system of regular monitoring/discussion days.

Verification has shown that the introduction of the NQF is a complex activity linking or reviewing all activities characteristic for the institution.

### 2. *Institutions proceed from their unique personnel, financial, material and qualitative terms, ensuring that study programmes and study fields open in the relevant subject area and leading to qualifications within the NQF scope correspond to the educational mission of the institution in accordance with its type and strategy based on a long-term plan and to European requirements (if required for the profession), or respect whether the training leads to a regulated/unregulated profession.*

The introduction of the qualifications framework implies that institutions and other bodies involved in activities defined by law for educational institutions continuously reflect on and discuss their fulfilment of its educational role.

It is necessary to prepare the application of NQF in relation to the nature of the provided education and to whether the studies are regulated or not.

The implementation of NQF and the acceptance of particular subject areas are also linked to the tradition and size of the institution, with its long-term profile and with its focus on quality. The pilot implementation process showed that the application of the qualifications framework results in the revision of study programmes and fields of study to update the study programmes towards contemporary scientific knowledge, the use of requirements of the practice, employer requirements; it leads to the efficient use of resources and conditions for instruction (staffing, premises, material conditions, etc.) and to updating education methods that, in addition to expert knowledge and skills, develop soft skills.

The acceptance of the subject areas and the development of study programmes and fields are perceived as academic freedom - as one of the means serving to promote and preserve the quality of studies.

### 3. *For the practical implementation of the NQF, it is an advantage for the institution if it has study agenda supported by an information system allowing the information system to be programmed/prepared so that all data relating to the knowledge, skills, general competencies connected with the NQF, study programme, field of study within a specific subject area, to study modules, courses, etc., can be easily entered and later generated in the structures required (accreditation, evaluation).*

The implementation has shown that a university managed the implementation better if it had a guideline regulating the rules for updating individual study programmes and fields. It had guidelines for the approval of classification under the qualifications framework, innovation of a study programme or field, for processes ensuring the quality of individual qualifications frameworks, study programmes and study fields.

For a successful implementation, the institution should determine the degree of responsibility for individual entities, bodies, departments concerning the acceptance of qualifications frameworks, the innovation of study programmes and fields, courses, their creation, testing, evaluation in terms of the preparation of the accreditation file and/or quality assessment (an internal process at the university).

In order for the implementation to be successful, the institution should define its risks and/or identify what actions to take to eliminate them.

4. It is recommended that the institution employ its management structures for the implementation of the NQF.

The implementation verified for the institutions involved that it is essential that the whole process be coordinated at the university level by the vice-rector/vice-rectors, at the faculty level by the dean, vice-deans and guarantors of the study fields, at departments/institutes by guarantors of the individual area of courses, etc.

The implementation experience we have now shows that it is essential that the whole activity be managed and coordinated by an "implementation expert" - one person/panel of only a few members.

The final reports of the initial implementation emphasize the seriousness of the introduction of NQF, the inevitability of a comprehensive approach that affects all aspects of instruction, personnel and material facilities. It is necessary to anticipate the consequences of each of the proposed changes.

5. With internal regulations the institution defines in detail the procedure for assigning the education provided to the NQF, the procedure for the development/innovation, implementation and evaluation of study programmes, fields and courses in accordance with the NQF.

The implementation indicated that the basic process and nature of generated information of a study programme, field and courses should form part of university regulations (study and examination rules, credit system rules, rules for internal accreditation/procedure for the development of a study programme or field – according to the rules of law, conventions of the institution).

The implementation showed it is stimulating if the information has a structure, because institutions undergoing the pilot implementation were creating matrixes/forms which were filled with information on study programmes/fields of study/study courses. It always corresponded to the character of the information system in which the institutions manage their study agenda.

Initial experience suggests the need for a preliminary analysis and detailed description of the state of study programmes, fields and courses.

If the institution provides instruction within study programmes and study fields at several sites (faculties, departments, institutes), it is important to identify and define the initial situation and establish the future outcome.

6. Prior to commencing the NQF implementation, the institution plans the timeframe and the successive steps for introducing the NQF, unless specified in a legal regulation.

The experience we have so far suggests that it is necessary to first consider what experience the institution has with the description of individual study programmes, fields and courses in the structure of knowledge, skills and general competencies.

There are institutions that prepared data for the ECTS Label, thanks to which they have many of the descriptions implemented. Other institutions have undergone the all-institutional accreditation and have the connection and relationships between the programme, field, modules and courses very well thought out and described. Other institutions have recently accredited/reaccredited study programmes and fields and prepared descriptions of study programmes, fields and courses in order to clearly define the information that will introduce to prospective students what knowledge, skills and general competencies they will have to master during the studies to achieve the desired profile and find employment.

On the other hand, there are institutions that have devoted only the absolutely necessary or minimum attention to the character of the descriptions; here the application of the NQF will require more steps and efforts.

The experience we have so far suggests that if the NQF is implemented as part of the creative process, then, depending on the size of the institution and the experience outlined above, it may take 2 to 6 semesters, 12 to 36 months.

7. *Prior to the implementation of the NQF, the institution creates a communicative environment.*

The progress of implementation indicated that communication at all levels of the institution, controlled discussion, explanation of the role and form of the NQF are crucial for meaningful introduction of the NQF elements. The implementation showed that discussion over study programmes, fields and courses in relation to the subject areas led to effective instruction. The implementation also confirmed that good descriptions provide vital, clear, and - in a broader (university, national) context - comparative information regarding the difficulty and form of studies to the current and future students.

The implementation conclusions emphasize that successful implementation of the NQF depended on the provision of information, the well-managed coordination of all steps and regular meetings. While the amount of meetings and their high time demands depend on the working atmosphere at individual institutions, the frequency and duration of meetings and discussions were more important in the beginning. Basic rules had to be agreed on, the contents/interpretation of the terms had to be specified for the entire institution, the contents, structure and interdependence of a subject area with the study programmes and fields provided needed to be clarified.

8. *In connection with the use of the NQF, institutions utilise the ECTS credit system in all study programmes and fields covered by the NQF.* Higher education institutions can also use the ECTS credit system in lifelong learning programmes.

Institutions also:

- in accordance with European rules (especially ECTS), credit each partial demonstration of knowledge, skills or general competencies, including the degree exam upon the completion of studies;

- assign credits to the state rigorous exam pursuant to Art 46 (5) of the Higher Education Act with the aim of defining the expected workload required to prepare for the rigorous state exam (for general medicine), while the credit value of such state exam does not exceed the difference between the maximum permissible credit value of the NQF qualification level 3 and the



usual credit value of the first qualification at this NQF level;

- only credits earned for demonstrated knowledge, skills and general competencies that correspond to the relevant NQF difficulty level are assessed as relevant to the requested credit value of the qualifications.

The pilot implementation showed that during the creation of the description of a study programme, field and courses, it is necessary to consider all elements that ensure their adequacy (expert and personnel level, the role of key/profiling /theoretical courses; the ratio of preparatory and specialized courses and the ratio of requirements for knowledge, skills and general competencies in relation to the corresponding level of the credit rating, or requirements of the student).

The pilot implementation suggests that each description clearly includes professional regulations, if there are any for the relevant field. It is assumed that the mechanism for developing study programmes and study fields or a credit score will reflect the mechanism for assessing the study programme and study field from the perspective of the labour market, the participation of professionals, the perspective of the region, etc.

9. *Institutions apply a coherent and transparent approach to evaluating the demonstration of knowledge, skills and general competencies based on explicit evaluation criteria. In principle, knowledge and skills are demonstrated directly; the demonstration of general competencies can also be inferred from the context in which the relevant knowledge and/or skills have been demonstrated.*

Critical for each study programme and study field and study courses is how their profile is fulfilled with outcomes. It is assumed that the descriptions will also showcase the singularity of the institution and that in relation to the NQF they will formulate what each of the graduates should typically know, what path the institution offers to ensure that outcomes within the NQF are met and verified.

In describing the outcomes it must be quite clear which outcomes belong to the bachelor's, which to the follow-up master's, and which to the doctoral study programmes.

Institutions consider descriptions/outcomes in relation to the conditions for the admission to the particular type/level of the study programme (provided the law continues to allow for students of any bachelor study programme to be admitted to the follow-up master's programme); they consider the conditions of the admission process, consider the structure of the follow-up master's degree programme and study field, in order to ensure the shift of all the knowledge, skills and general competencies that profile the follow-up master's programme and study field.

Institutions prepare documents for the implementation of the NQF in order to prevent the unification of tertiary education, to maintain the singularity of the institution and the individuals who profile it.

10. *Institutions publicize data about the structure of qualification (study programme, field of study) in terms of tested knowledge, skills and general competencies at the level of qualification as a whole and its individual components in the languages in which they issue the Diploma Supplement. The Diploma Supplement contains a link to an online source of information.*

Pilot testing of the NQF concerning the implementation of the descriptions of subject areas revealed that the existing descriptions of activities that define the institution were subjected to systematic and controlled inventory. The graduate profile was clarified in detail, and criteria for the students' assessment of the instruction quality were specified in detail.

## 1.3 RECOMMENDATION FOR TEACHERS: HOW TO WRITE LEARNING OUTCOMES FOR STUDY FIELDS AND COURSES

Editors: Petr Pabian and Drahomíra Rybová

This methodology helps those who will write the learning outcomes at the level of study fields and their courses. In the first part we explain that learning outcomes record the knowledge and skills that students acquire. In the second part we specify in detail how to distinguish between the field-specific knowledge and skills (and general competencies). In the third section, we will show how to use the learning outcomes to capture the gradual development of the students' knowledge and skills during their studies. The fourth section is devoted to the relationship between the learning outcomes of a programme/field and its individual courses.

Creating learning outcomes does not involve the mechanical copying of designs or a simple procedure following instructions; on the contrary, it requires a professional and creative approach, as each field of study and each course are unique. This methodology, therefore, features ideas for your own thinking about the learning outcomes of your fields of study and courses and about how learning outcomes are connected to educational objectives, the contents of the courses, education methods, and the evaluation of the students' abilities.

### WHAT ARE LEARNING OUTCOMES?

Learning outcomes are field-specific knowledge and skills, as well as general competencies the students acquire in a given field of study or course and which they must demonstrate. Each field of study and each of its courses therefore have learning outcomes: what we expect the students to learn during their studies. Once we write down our expectations, we obtain a description of the field and its courses that is extremely clear for both current and prospective students as well as for employers. Students easily learn what the studies will involve and what they will therefore know and be able to do at the end of their programme – and so will their employers (the reason why learning outcomes are required for accreditation and the ECTS Label).

Example of learning outcomes (field of study Nursing):

*Students are able to:*

- *explain the principles, methods and practices in providing care to child and adult patients;*
- *describe the rules and principles of ethical behaviour and conduct in nursing care;*
- *provide care to child and adult patients, both standard and emergency;*
- *respect the age, individual, and other differences of the clients/patients when providing nursing care.*

Learning outcomes contain what a graduate from a field of study or a student after completing a course is able to describe, explain, design, process, etc. When writing them, we therefore do not focus on what we as teachers do (on our idea of what we will teach the students) but on what students and graduates will be able to do after completing a course/programme.

**! Common problem** – we write about something other than what the student or graduate should be able to do at the end of the course/programme:

*- A student learns about the basic historical development of the field.*

This formulation describes the progress of learning, not a learning outcome; it needs to be reformulated, e.g.:

*- A student is able to characterize three major historical phases of the field development.*



An output formulated in this way clearly tells students what they are expected to deliver at the final examination of the course; likewise, it is equally clear to new teachers what they need to test students for when taking over the class from someone else.

**! Common problem** – we write about the knowledge and skills too generally:

- *A student knows the principles of professional ethics.*

How do we test if the student has the “knowledge”? Do we expect students to be able to enumerate the principles of professional ethics, to also describe them in greater detail, or to explain their historical origin, to evaluate their importance for professional practice, or to justify why these principles are more important than others? Overly general formulations conceal many possible levels of knowledge and skills, thus helping neither students nor teachers to clarify the expectations. Instead of general verbs it is always preferable to use a specific one that accurately describes what the student or graduate should demonstrate when the learning outcomes of a course or field of study are being tested. One of the ways to identify overly general verbs is when these cannot be used in a direct assignment for the students: we may require them to “explain” or “construct” but usually not “know” or “understand”.

- *An example of overly general verbs: knows, understands, is oriented in, is aware of, is able to, can, etc.*

*Explanatory note:* some of these verbs are used in the learning outcomes of the national minimum standards or in the typical learning outcomes of subject areas. There, however, they are relevant, as these formulations are highly general and in addition are not directly verified (no one takes an exam from a subject area but always from one of the study fields in this area). We therefore always write the learning outcomes of fields and even more of their courses as specifically as possible, so that it is clear what a graduate or a student should demonstrate and what we as educators should verify.

**! Common problem** – we write learning outcomes as the ideal sum of knowledge and skills:

Learning outcomes summarize the knowledge and skills that we actually verify in students, and consequently we guarantee that all students and graduates have the relevant knowledge and skills. In other words, the learning outcomes of courses and study fields primarily set out the minimum standard that all students are obliged to meet, not an ideal attained only by the best students.

## DISTINCTION BETWEEN FIELD-SPECIFIC KNOWLEDGE, FIELD-SPECIFIC SKILLS AND GENERAL COMPETENCIES

The first two learning outcomes listed in the previous chapter represent specialized knowledge in a given field of study, while the other two are related specialized skills in the field of study. **Field-specific knowledge includes everything a student or graduate is able to list, define, describe, explain, analyze, etc.; in other words, their theoretical/declarative knowledge in the field. Field-specific skills include all situations in which a student or graduate can apply their knowledge in practice: what they can design, create, implement, resolve, improve, etc.; in other words, their practical/functional skills in the field.**

The distinction between knowledge and skills is not mechanical, it always depends on the field and also on the educational objective.

The nature and definition of the knowledge and skills fundamentally vary between the different subject areas – for example between psychology and engineering. They also vary in the

different levels of education: for example, the key skills in the Nursing bachelor's programme will be associated with the care of patients, while at the doctoral level of the same programme the dominant skills will include the management and implementation of nursing research.

Examples of field-specific knowledge and skills:

Field	Knowledge	Skills
General Nurse	<i>Students can describe the nursing process in its various stages.</i>	<i>Students can put the nursing process in practice with the infant, toddler and preschool child.</i>
Psychology	<i>Students can explain the various aspects of the workload of a clinical psychologist.</i>	<i>Students are able to carry out and describe the clinical observation of a client.</i>
Sociology	<i>Students can describe the basic preparatory and implementation phases of research and their key tasks.</i>	<i>Students are able to choose adequate methods for selecting a research group from the population for a specific task.</i>
Engineering Materials	<i>Students can describe the basic tests of mechanical properties and their evaluation.</i>	<i>Students are able to propose the type of test for determining specific mechanical properties of the material.</i>

**Common problem** – we do not differentiate knowledge and skills.

An example from the Psychology field of study:

- *The student can describe the equipment of a "consulting room" and prepare it for interviews.*

This formulation combines knowledge and skill. Making a distinction between them is important simply because we teach and test knowledge and skills in different ways: practical skills are not acquired at lectures or verified in a test – students acquire them much better in training or directly in practice and the verification takes place in model or real situations.

**! Common problem** – we always try to list the same amount of skills and knowledge.

Not all fields of study, and certainly not all courses develop knowledge and skills to the same degree. Fields of study concentrating on preparation for a particular profession will place a greater emphasis on skills, while a theoretical field will focus more on knowledge – in these examples, knowledge or skills will of course be prevalent in the learning outcomes.

This is all the more true for courses: sometimes the beginning of the studies features courses that develop mainly theoretical knowledge, based on which students develop their practical skills in subsequent courses. The learning outcomes of largely "theoretical" courses will primarily comprise knowledge, while the learning outcomes of "practical" courses will predominantly have skills.

Apart from field-specific knowledge and skills, there is a third category: general competencies. This includes everything students learn within a field of study that is "transferable" and applicable even outside this field. For example, if an education graduate becomes an NGO manager, the graduate will not be employing the field-specific knowledge and skills designated for teaching; this however does not mean that studies did not bring any value for the graduate's new job: the graduate has learned to communicate in the native language and other languages, has learned teamwork, critical thinking, creativity or independence in the decision-making process.

Examples of general competencies from the national minimum standard for the bachelor's degree:

*Students are able to:*

- *Make independent and responsible decisions based on framework terms of reference;*
- *Coordinate team activities based on the framework terms of reference and allocated resources;*
- *Solve problems, including consideration for their ethical dimension;*
- *Clearly and convincingly communicate to experts and laymen the information about the nature of professional issues;*
- *Independently acquire further specialized knowledge, skills and general competencies.*

All graduates, regardless of the field they study, should have the competencies described above. In other words, the general competencies are actually the same for all study fields. Therefore, there is no need to write general competencies for individual fields of study; it is necessary to pay attention to where and how students acquire these competencies during their studies and to the method established to test that they truly have them.

An example of the acquisition of a general competency thanks to developing field-specific knowledge and skills.

Social science students are learning questionnaire surveys. The learning outcomes will include, for example, the following knowledge.

*Students are able to:*

- *explain the different methods of selecting a survey group and their advantages and disadvantages;*
- *describe the common principles for the formulation, sequence and strategy for asking questions.*

The learning outcomes will also include the following skills.

*Students are able to:*

- *select an adequate sample based on the definition of the research problem and the resources available;*
- *create a questionnaire corresponding to the research principles and research questions;*
- *in a team of 3 to 5 students, conduct a questionnaire survey of the team's own design.*

In this manner the students acquire and/or develop the relevant general competencies.

*Students are able to:*

- *coordinate the team's activities based on the framework terms of reference and allocated resources.*

## KNOWLEDGE AND SKILL DEVELOPMENT DURING STUDIES, OR GRADATION OF LEARNING OUTCOMES

The knowledge and skills of students and graduates of master's studies naturally exceed the knowledge and skills of students and graduates of a bachelor's programme; likewise, the knowledge and skills of students at the end of their studies exceed those that students have in the first year of their studies. In other words, during university studies the learning outcomes develop gradually, a fact that needs to be reflected in the learning outcomes.

There are several ways to express the gradation in the formulation of learning outcomes:

- With a verb expressing a more comprehensive activity: e.g. describes at a lower level and explains at a higher level (which is another reason for not using general verbs – if, following the completion of an introductory course, a student "knows," how will we express the gradual development after the student has completed other follow-up courses?);
- With the level of autonomy: e.g. a student is able to process when under guidance at a lower level, and a student is able to process independently at a higher level;
- By expressing the range and depth of knowledge and skills: e.g. from the initial acquisition of partial knowledge and/or skills, students move to the acquisition of comprehensive knowledge and skills (they gradually learn to formulate research questions, evaluate the main methodological approaches in the field and, eventually, for example, independently design, implement and evaluate research);
- By expressing the shift from acquiring knowledge to developing skills: e.g. with the introductory courses this may involve learning the theoretical and methodological basis (e.g. the student describes the nursing process, explains the differences between the major research methods, etc.); with subsequent courses and higher levels this may involve specific application (the student carries out the nursing process, implements research surveys, etc.).

Example of gradual development No. 1 – study programme Engineering; courses Machinery Components and Mechanisms I and II:

<b>Bachelor's degree – skills</b> Upon completing the course Machinery Components and Mechanisms I, the student can:	<b>Master's degree – skills</b> Upon completing the course Machinery Components and Mechanisms II, the student can:
<i>Design a selected part of the machine</i>	<i>Design and adjust a simple drive group</i>
<i>In terms of strength, design a selected component of the machine, statically and dynamically</i>	<i>Calculate the elastic and inelastic couplings</i>
<i>Design and check the strength of removable and permanent shaft connections</i>	<i>Calculate and design standard and non-standard (HCR) gears</i>
<i>Design and check the strength of a prestressed bolt connection</i>	<i>Draw manufacturing drawings of gears with the correct completion of additional gear charts</i>
	<i>Analyze the level of the assembly technical design</i>
<i>Assess the level of the technical design of each component</i>	

The gradation of specialized skills lies in the ability to design and analyze more complex assemblies following the completion of a course in the follow-up master's study programme, as compared to individual components and/or their connection after completing the relevant course in the bachelor's study programme.

Example of gradual development No. 2 – study programme Political Science; field of study Political Science

<b>Bachelor's degree – skills</b> A graduate with a degree in Political Science can:	<b>Master's degree – skills</b> A graduate with a degree in Political Science can:
<i>interpret the results of political science research;</i>	<i>independently design the contents and form of the basic quantitative or qualitative political science research;</i>
<i>Analyze the results of elections in the Czech Republic or abroad at the local, regional, national and European level;</i>	<i>Analyze political processes in the Czech Republic and abroad and anticipate future development and possible solutions;</i>
<i>prepare the basic strategies and concepts of activities for non-governmental organizations.</i>	<i>Analyze and develop strategic plans in politics and in the activities of non-governmental organizations.</i>

## LEARNING OUTCOMES OF STUDY FIELDS AND COURSES

Experience with the implementation of learning outcomes clearly shows that it is best to proceed "top-down," i.e. to first formulate the learning outcomes of a study field as a whole – what knowledge and skills the graduates of our field should have. This needs to be followed by a description of how the said knowledge and skills become developed in various courses; in other words, how each course contributes to the overall outcomes of the field (where courses are understood as all the components of a study field: classes, practical trainings, seminar papers, etc.). It is important, of course, to ensure courses are interlinked: sometimes the introductory courses tend to develop knowledge while the follow-up courses related skills; sometimes knowledge or skills are so complex that they are developed in a wide range of courses throughout the entire duration of studies. Such an approach can enhance curriculum "transparency": it may turn out that some of the knowledge or skills are not developed enough to meet the learning outcomes of the whole study field, or conversely, that several courses overlap and develop the same knowledge and skills.

The learning outcomes of a study field and courses, naturally, differ on the level of generalisation. While the learning outcomes of courses are much more specific and often relate to partial knowledge and skills, the learning outcomes of a whole study field need to be formulated more generally so as to cover more comprehensive outcome knowledge and skills. Nevertheless, it is again necessary to avoid overly general formulations (e.g. knows, understands), which are impossible to verify and cannot express the gradual development at the next level of education.

An example of the learning outcomes of a study field and related partial learning outcomes of the individual courses:

<b>Learning outcomes of a field – graduates with a master's degree in Psychology can:</b>	<b>Examples of the learning outcomes of courses that contribute to the learning outcomes of the study field:</b>
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## 2 experience

*formulate a research problem, research objectives, hypotheses or research questions;*

*propose several options to solve problematic points and evaluate their suitability in the given situation;*

**AM TEAM** *select appropriate advanced methods and justify their choice;*

search and independently study the detailed procedures of these methods when preparing to process data from a particular research:

independently present their research findings and critically evaluate others'

*present the design of their research project to a group of students;*

...*assess the quality of someone else's* contribute significantly to the quality of education. *research design based on relevant criteria.* What is decisive is whether teachers are

The existing experiences of Czech universities and tertiary vocational schools indicate that while the qualifications framework and learning outcomes can contribute significantly to the quality of education, they also create the danger of administrative formalism. What is decisive is whether teachers are given space for professional discussion on the objectives and content of education in their fields or whether learning outcomes are only formally prescribed, without any support and room for a creative approach and utilisation.

## Frequently Asked Questions:

- **What is the relationship of the learning outcomes of a programme/field to the national minimum standards and subject areas**

The year 2011 national minimum standards and subject preparation of the qualifications framework work and learning outcomes in 19 subject areas in 19 faculties of public universities, national private college, and four tertiary vocational schools (for a detailed list see the table). A total of 487 university and TTS teachers participated. For details about the schools see the following chapters.

Subject area (10)	Participating institutions (18 schools/faculties)
Psychology	the subject area may not be trained to the same degree in the fields in the area; various study fields may, for example, put more emphasis on selected skills and knowledge described in the descriptors of a tertiary university, Faculty of Arts
History	may develop them less or not at all, or they can of course develop beyond the typical learning outcomes of the relevant subject area. Jan Evangelista Purkyně University
Social Work	each university, Faculty of Arts, Faculty of Humanities the Hussite Theological Faculty compare with the national minimum curriculum (Social Work) (needed); we then write the University of Economics Faculty of Learning outcomes of the needed Faculty of International Relations – Faculty of Business Administration
Economics	<b>What learning outcomes do we need?</b> University of Technology, Faculty of Business and Management many learning outcomes. The optimum number is between 4 and 6. Merckel University, Faculty of Business and Economics the learning outcomes must not include those we cannot verify or in the follow-up courses (e.g. when a theory course focuses mainly on related skills are verified in the follow-up specialized practice). The College of Hospitality
Mechanical Engineering and Materials	VSB – Technical University of Ostrava, Faculty of Mechanical Engineering – Faculty of Metallurgy and Materials Engineering. may be even less than the recommended 4 to 6, provided they include the student or graduate to know by the end of the programming.
Electrical Engineering	University of Technology, Faculty of Electrical Engineering and Communication
Energetics	<b>relation between the learning outcomes and the other information study field?</b> Tertiary Professional School Sezimovo Ústí Czech Technical University, Faculty of Mechanical Engineering



them we also continue to work with syllabi/descriptions/cards, etc., which contain detailed descriptions of the course content and curriculum, required and recommended reading, education methods (mainly focused on whether students actually perform in the course what they should be able to do upon its completion) and evaluation methods (how we continuously, and at the end, evaluate to what extent the students have the relevant knowledge or skills).

- **Who should write learning outcomes?**

Implicitly, learning outcomes may be written only by a person fully familiar with the course or field of study, preferably a person responsible for the concept of the study field or course (i.e. the guarantor of a study field or course). Due to the fact that learning outcomes summarize what is subject to verification, the outcomes may not be written by someone who does not verify the students' achieved knowledge and skills in the course (or, who does not test the course subject matter).

- **Which components of studies do we describe with the learning outcomes?**

We use learning outcomes to describe all fields of study, all courses/classes, as well as practical training and theses. In other words, all parts of the curriculum that are evaluated with credits should also be described with learning outcomes – students will receive credits when we establish that they have acquired the relevant learning outcomes.

- **How to use learning outcomes to strengthen the links between the courses in the curriculum?**

If for each course we use learning outcomes to define the input prerequisites, i.e. we also describe the required input knowledge and skills instead of merely referring to the preceding course, we will identify the points where there is a missing link to the previous instruction because the preceding courses failed to develop the outcomes to the input level that the follow-up courses require.

- **Who is the methodology for?**

The methodology is designed for those who will write learning outcomes of study fields and their courses. It is not to be used for external evaluation of study fields in accreditation procedures or for any other formal or administrative purposes.



<b>Veterinary Medicine</b>	University of Veterinary and Pharmaceutical Sciences, Faculty of Veterinary Medicine – Faculty of Veterinary Hygiene and Ecology
<b>Agriculture</b>	Czech University of Life Sciences, Faculty of Agrobiological Sciences, Food and Natural Resources
<b>Health Care</b>	University of South Bohemia, Faculty of Health and Social Studies
	College of Healthcare Zlín

This chapter aims to apply their experience to summarize the main benefits that the introduction of learning outcomes had for their fields and to draw attention to the main issues and risks associated therewith:

#### Main benefits

- clear information about the content and results of studies;
- opening a professional debate on the content of studies;
- improved consistency of courses in the curricula;
- consistency of the learning outcomes with the methods of education and evaluation.

#### Main issues

- danger of administrative formalism;
- high time demands.

In this chapter, we give the most space directly to voices from individual schools by quoting from their reports on the pilot implementation of the qualifications framework.

## CLEAR INFORMATION ABOUT THE CONTENT AND RESULTS OF STUDIES

For many schools, the main benefit was the fact that learning outcomes provide a clear sum of the knowledge, skills and general competencies that students acquire within the relevant field. In various schools and fields the different groups for whom these descriptions are primarily dedicated have different importance. For some schools it is most important to provide prospective students with clear information about what they could learn at this particular facility (unlike at other, “competing” schools). On the other hand, for some vocational schools it is crucial to give equally clear information to employers. One of the implementing teams summarized the overall benefit: “Easier orientation of employers, students and prospective students in the study fields.” (VSB - Technical University of Ostrava)

Another benefit is “easier orientation of teachers in the requirements for the outcomes from individual courses” (College of Healthcare Zlín), which is particularly important when a teacher takes over a class, when clarifying the link between courses and the curriculum or between individual courses (discussed in detail in the following chapter). In order to achieve this benefit of multilateral clarity, it is naturally necessary to meet the requirement of “formulating learning outcomes so that they are completely clear not only to the project experts but also to academics, current students, prospective students and other users.” (University of Economics)

Many schools also appreciated the fact that the descriptions of the fields/programmes in the form of learning outcomes allow for comparisons with other schools: “our expectation is to create a

benchmark comparing the focus and level of economic faculties and to verify how 'competitive' our bachelor programme is". (University of Technology, Faculty of Business and Management) As the learning outcomes are used in many schools and professional standards around the world, they also facilitate international comparison: "we see the benefit in the detailed reflection of the compatibility of Psychology at the Faculty of Arts, Palacký University Olomouc, with the national and international (see Europsychology) qualifications frameworks in the area of psychology education." (Palacký University)

None of the schools confirmed the fear that the introduction of the qualifications framework could lead to the unification or standardization of education. The qualifications framework sets only a minimum standard; in no way does it hinder the manifestation of the mission and specifics of the fields or institutions. In some fields the comparison of the field descriptions serves to identify similarities, while in others it helps highlight the singularity of the field.

## OPENING A PROFESSIONAL DEBATE VERSUS THE DANGER OF FORMALISM

The most common problem in schools was formalism: at first, teachers will often perceive the preparation of learning outcomes as another administrative requirement that needs to be only formally fulfilled by filling in the relevant boxes. Experience from all schools, however, indicates that when an administrative instruction gives way to a discussion about the meaning of the qualifications framework, instead of formal filling-out, teachers start a professional debate about the contents and results of studies in the field. "Despite the initial scepticism (preparation of the training outcomes had been viewed as another administrative burden), the academic staff/teachers changed their attitude once they understood the usefulness of the Q-RAM project thanks to their own direct experience." (Charles University, Social Work)

Teachers agree that writing learning outcomes for study fields/programmes and their courses is a specialized and creative activity: "The main benefit of the project is the expert discussion about the creation of curricula." (University of Technology, Faculty of Business and Management) For a number of schools, describing programmes/fields with learning outcomes is a new experience that certainly takes time: "Right now some teachers are more likely to see the formal change rather than a fundamental change in the approach." (Charles University, Psychology)

Therefore, it is important to avoid a situation where teachers would see the implementation of the qualifications framework as a formal administrative requirement: "We warn against premature implementation of the Q-RAM ideas into the administrative and legislative form." (Charles University, Social Work) On the contrary, it is important to provide enough space for professional debate at the departments: "A positive aspect [of introducing learning outcomes] is an improvement in the atmosphere, especially in terms of communication on the methodology and its implementation into the curriculum of departments, which leads to improvements in instruction." (College of Hospitality) In other words: rather than introducing formally it is better not to introduce anything at all.

## IMPROVED CONSISTENCY OF COURSES IN THE CURRICULA

The professional debate on the concept of curricula in a number of schools led to, among other



things, improvements in the consistency of courses: describing courses with learning outcomes "will eliminate redundant disciplines or, on the other hand, strengthen instruction where the requirements of the main fields of study would not be adequately met." (Palacký University) Clear formulation of the outcomes of a field/programme and courses helps to identify how much each course contributes to the development of the knowledge, skills and general competencies that are key to the field/programme as a whole.

Additionally, the improved consistency of courses within the study programme produces important positive consequences beyond the actual quality of education: "it will prevent any overlaps in the content of courses, reduce the students' workload, provide space for further education and research of the academic staff." (University of Technology, Faculty of Business and Management) It was this that became for many schools the most important immediate benefit of the introduction of learning outcomes, which was a pleasant surprise both for the project team and the teachers at schools: "The benefit of this aspect of the Q-RAM project has exceeded our expectations and triggered several important changes." (CARITAS College of Social Work Olomouc)

## CONSISTENCY OF THE LEARNING OUTCOMES WITH THE METHODS OF EDUCATION AND EVALUATION.

Teachers in schools also strongly feel that the formulation of the outcome knowledge, skills and general competencies provides a new way of thinking about what and how we teach, what and how the students learn, and how we evaluate it: "Our participation in the project provides us with a deeper and more systematic analysis of the current state of teaching – that is what the student should know, be able to do, how we teach it, and how we verify that the student has the required competence." (Charles University, Social Work) Therefore, it makes no sense to write learning outcomes only formally or as an unrealistic marketing show: "When formulating the outcomes it is necessary to take into account the option to control – verify – assess the outcome." (University of South Bohemia)

In this respect it follows up the Q-RAM project IPN "Quality Assessment," which looks for ways to improve the consistency of learning outcomes, education methods (how we teach students and especially how students learn) and the ways of assessing to what extent students reach the target knowledge and skills. It is based on the integrity of three basic principles:

- 1) learning outcomes: they say what the students should be able to do;
- 2) education methods: students need to do what they should master – engage in the activities contained in the learning outcomes (i.e. explain, analyze, compile, etc.);
- 3) evaluation methods: students need feedback on what they are doing, and at the end we need to verify that they truly are able to perform activities specified in the learning outcomes.

## TIMEFRAME OF THE IMPLEMENTATION OF THE QUALIFICATIONS FRAMEWORK

Although a specialized and not an administrative activity, the preparation of learning outcomes for a programme/field and its courses is demanding both in terms of the workload and time of teachers: "Within a regular workload this activity is highly time-consuming, especially from the perspective of achieving the required and expected quality". (University of South Bohemia) As explained above, the experience from schools has shown that it is impossible to formally order the entire process and

expect results within a few months; instead, it is necessary to create an opportunity for a professional debate among teachers at the departments: "A change in the approach to describing a field and courses also takes time because it is necessary to convince all the participants of its meaning" (University of Veterinary and Pharmaceutical Sciences).

The schools' specific experience with time demands varies considerably, depending, for example, on the size of the programme/field, the number of courses and/or teachers, the previous experience with similar methods of describing fields/programmes, but also, for example, on the extent of possible support via an information system. Perhaps the most important relevant experience is with the preparation of learning outcomes for the ECTS Label, which schools, nevertheless, had been preparing following a different methodology; all the participating schools in the project confirmed that it was advisable to fundamentally revise all the previous learning outcomes in line with the Q-RAM methodology. Even with this experience, the process remains highly time-consuming: "In relation to the ECTS experience, at least two to three years. The introduction of the qualifications framework will entail a change in IS, which for large universities is time consuming and costly" (University of Technology, Faculty of Business and Management).

## CONCLUSION

The experiences of university and TTS teachers show that although the introduction of the qualifications framework and learning outcomes is not trouble and risk-free, ultimately the gains and benefits are still much greater. The greatest risk lies in a mere formal introduction, where the administrative regulation would transform the whole process into filling out forms. Instead, when the schools provided room for a professional and creative discussion, the resulting learning outcomes made up universally clear information about the content and results of the studies, improving the consistency within the curricula and connecting the learning outcomes with the education and evaluation methods. As one of the participating schools put it: "Ultimately, improvement in the quality of studies and the graduates' skills" (VSB - Technical University of Ostrava).



## 2.1.2 EXPERIENCE FROM EDUCATIONAL SEMINARS

editor: Iva Málková

From April to September 2012 seven seminars were held with the view of informing the academic community of higher education institutions in the Czech Republic about the results and nature of the project. The morning plenary sessions and afternoon workshops produced a number of reflections, notes and analytical observations, which the project management viewed as essential feedback. Recording them in the comments of the seminars, it summarizes the most inspiring ones in a report on the openness and exclusivity and inspiring aspect of the whole project. The seminars were attended by a total of 411 teachers and representatives of schools (universities and TTSs).

The following lines summarize the reflections and ideas that were voiced at the individual meetings; rather than how frequent they were, attention is paid to their importance. Among other things, these are manifestations of critical thinking, which was also present at the working discussions of the widest team of the Q-RAM project. We believe the items collected below are necessary correctives – recorded, repeated questions that accompanied the non-mechanical access to all areas connected with qualifications frameworks, as the search for a value level for the application of elements that should make tertiary education clearer and comparable. It is not necessary to respond to the incentives or explain the final opinion of researchers responsible for Q-RAM, because we believe that these are uncertainties that must accompany any creative activity: whether the results could be misused, or utilised, whether they are (as the folk wisdom says) "good intentions paving the road to hell". After the experience with the Q-RAM project, it is evident that all activities should become part of a natural organization of activities associated with tertiary educational institutions, that it is essential that authorities that manage and control the activities of such organizations respond in their documents to the results of the Q-RAM project, that all the results of the Q-RAM project are given meaning and weight.

### ACCESS TO THE Q-RAM PROJECT AND ITS PURPOSE

- The meetings included discussions about the futility or the meaningfulness of the Q-RAM project.
- It is still necessary to clearly explain/realize and specify the relationships between MEYS – Q-RAM – law – regulations – the university/school. Where is the project heading? Who wanted Q-RAM? Why did they want it? Why did the universities/schools and their academic staff become involved in the creation and implementation? The answers emerge especially in the first section of the present document, i.e. in the recommendations for the education policy, school management and teachers .
- The participants repeatedly raised concerns about the demands on completing the data of the courses and the subsequent utilisation. However, the participants presented their personal experience (based on their experience with the accreditation and implementation of the Q-RAM project), highlighting the advantages of the system (easier assessment of requests for the recognition of foreign qualifications, easier orientation of employers, etc.).
- An informal discussion also raised the question of whether the implementation is essential (stipulated by law, required) or whether it is a 'voluntary' activity.

- Schools seem only to be interested in what they are obliged to do, the necessary minimum. While some of them are motivated by ECTS Label applications, others are not. From the schools' perspective, it is a mistake that the forms for the preparation of the accreditation material do not include sample forms that would clearly indicate what the learning outcomes are required to look like. Likewise, the fill-in form instructions should include a manual.
- Participants often asked whether the introduction of the NQF will be mandatory, required by the Accreditation Committee or another body, and which binding regulations will include the requirement for the preparation of learning outcomes.
- A fact that emerged at the seminars but also suggested later difficulties in the overall implementation of the Q-RAM project revealed that some of the participants had been ordered to attend the seminars by the management of the universities or faculties. Their attitude would then always be negative.
- Some university representatives and teachers are against any changes; even those who decided for the implementation within the project would hear the following: "just another idea of theirs," "... that's pointless quibbling," "... why, when things are working now and comply with the accreditation?"

## ADMINISTRATION OF THE Q-RAM PROJECT

- Concerns about irrational bureaucratic reporting.
- A danger of all descriptions – someone "learns to write" it, confusing ends with means.
- A solitary verification has been conducted; the tension between such a verification and a general implementation is hard to miss.
- The composition of the participants of the third seminar pointed out a potential pitfall – about half were administrative workers who expected to learn how to quickly and adequately rewrite the current accreditation materials.
- Q-RAM is an administrative burden, BUT! mere administration kills the results of the Q-RAM project.
- The preparation of study fields/courses requires "passion for teaching," a great amount of enthusiasm for the field and a large dose of creativity; those who like to teach and appreciate the high efficiency of results – learning outcomes – will play a crucial role.
- The implementation will always be ensured by a few committed colleagues dedicated to their field, by those who understand their mission.
- The form of implementation will always be determined by the ethos of the schools, the atmosphere in the institution.



- If applied languidly, the methodology is vulnerable.

## Q-RAM AS AN INCENTIVE FOR TERTIARY EDUCATION INSTITUTIONS

- Initial scepticism is welcomed, as it ensures a critical approach throughout the implementation and draws attention to the risks of the Q-RAM project implementation.
- Participants joined mainly to obtain information not only about the anticipated amendment of law but mainly in relation to the change in requirements of the accreditation regulation.
- The good intention behind the Q-RAM project and descriptions of areas, the gratifying proportion of the tertiary education academia around the country are obvious, BUT! – given the status of higher education today, its management, etc., the information about the Q-RAM project is overshadowed by the basic risk of WHAT Q-RAM WILL BECOME AN INSTRUMENT OF, which will turn the logic of its treatment around.
- Problem – Q-RAM and the idea of it becoming a (dogmatic) instrument of control, a tool for eliminating comparison, the only tool of evaluation (with an emphasis on the administrative management of the teaching process).
- Areas can expect that the existing study programmes and fields will undergo revision.
- Subject areas could establish themselves provided they receive fair treatment.
- Subject areas can ensure the verification is at the level of knowledge, the profile of the graduate.
- When implementing the Q-RAM project, reflection of the field background is always important.
- The implementation should be mutually enriching.
- The discussion emphasizes that if a course is defined by an experienced expert, and is defined well, the description of the course becomes a fundamental, motivating, and educational framework for new/substituting teachers. They have a clear idea of what/how/why to implement in the class.

## KNOWLEDGE, SKILLS, GENERAL COMPETENCIES

- Questions related to skills: who will monitor them; who will verify them? How and when? It should also be clear that at the end of studies, the skill will very often be at the stage of "initial professional skill," "sufficient professional competence".
- If the area requires and applies it in practice, the comments should include what will be further developed in professional chambers, what will "be activated" only in clinical





practice.

- The commentary or description should provide a clear "path to the profile".
- In the preparation and updating of each field, emphasis needs to be placed on the ethical and value orientation of students/graduates.
- The verification requires developed sensitivity that can be expressed in the attitudes of students/graduates.
- The following questions were asked: What to do with subject areas that do not involve a field at the university but constitute e.g. a language department, math department or social sciences department for the whole university? We believe that the requirements of workplaces (departments, faculties) which demand services need to be clearly defined; it must be determined what role language training, mathematical education, social sciences orientation play in the graduate profile; what and why will be verified at the course outcome and at the field outcome. The requirements may vary unless the university specifies the graduate profile in these areas for all its graduates.
- Medical faculties have their own established time-tested method for knowledge verification.
- Another question was whether, when the implementation is introduced in schools with the same fields, the schools will adopt a comparative procedure and whether any consequences will be derived from this comparison. From this perspective it seems that new schools are more interested in the implementation, as it would, due to the anticipated greater competition, offer them possibilities for introducing a new system.
- One of the motivating factors favouring the implementation was the fact that the field was revised and the graduate profile re-established.
- The implementation facilitated an improved and more concise definition of the integrity and differentiation of fields. At some institutions the analysis has led to an effective merging of fields.
- Tension during the implementation emerges with doctoral degree programmes.





## 2.1.3 QUALIFICATIONS FRAMEWORK AND ECTS: HOW THEY CORRESPOND

Peter Noskievič

The requirement for the implementation of national qualifications frameworks in different countries is based on the need for a clear overview of tertiary education systems in European countries and the existence of the characteristics of qualifications acquired through various study programmes at tertiary education institutions. This initiative for the development of national qualifications frameworks was declared at the end of the first ten years after the signing of the Bologna Declaration and the launch of the Bologna Process directed at establishing a European Higher Education Area (EHEA). Its principal objectives included the adoption of a structured study system (bachelor, master and doctoral studies); support for student mobility; and the introduction of a credit system that would be shared across Europe and promote student mobility, the transferability of study results and their accumulation. Termed ECTS – European Credit Transfer and Accumulation System, the shared credit system has been adopted by most European countries, and its principles are summarized in the ECTS Users' Guide. The ECTS European credit system is an important tool implemented within the Bologna Process that promotes the achievement of educational goals formulated in national qualifications frameworks – achievement of qualifications formulated with descriptors in terms of knowledge, skills and general competencies of the required level and quality. The ECTS credit system is introduced into the study process independently at individual schools, which may apply for the recognition of the accuracy and consistency of its implementation with the European Commission by applying for an ECTS Label certificate. Based on the application filed, a higher education institution that has introduced the principles described in the ECTS Users' Guide into its study organization is assessed at the national and European level, and if approved, the European Commission awards it the ECTS Label. The label certifies that the study process is in accordance with the adopted principles of ECTS, declaring the establishment of the institution's internal mechanisms and the evaluation of the studies progress leading to the fulfilment of the content of studies and the acquisition of qualifications formulated through national descriptors for the specific study programme and field. The implementation of the ECTS principles thus becomes one of the options for ensuring the quality of learning objectives formulated by the national qualifications framework.

For the reasons above, we consider it important to summarize the basic characteristics of the ECTS credit system and point out the connection with its implementation and the implementation of the national qualifications framework at tertiary education institutions.

## BASIC FEATURES OF THE CREDIT SYSTEM

### **Credit Allocation**

The ECTS European credit system is based on the evaluation of the study efforts that an average student must make in order to meet the learning objectives. The annual capacity of the student is 60 credits, which corresponds to 25-30 hours of study per credit (depending on the total capacity of the academic year from 1,500 to 1,800 hours). A bachelor's degree with the standard duration of 3 or 4 years corresponds to a workload of 180 or 240 credits, while the follow-up master's degree with its standard duration to 120 credits. A master's degree with the standard duration of 5 or 6 years corresponds to 300 or 360 credits. Courses and study requirements have a specified number of credits allocated that the student receives upon fulfilling the study requirements of the course. Their allocation should reflect the study efforts an average student must make to complete all study assignments. The face-to-face part of learning, self-study and independent fulfilment of assignments must be taken into account.



## Study Evaluation

A national classification scale with four grades in tertiary education – excellent, very good, good and fail – is typically used for the evaluation of study results. The credit system introduces a score from 0 to 100 points given for the fulfilment of all requirements set for the completion of the course. Their acquisition does not usually depend on the evaluation of a single assignment but tends to be divided into the fulfilment of separate tasks. These are included in exercises, student's individual work and all components of an exam. Therefore, the student is evaluated for each task with a predefined range of points and the final score is then the sum of points earned.

## Accumulation Function of the Credit System

The accumulation function of the credit system enables the gradual meeting of the specified goals and the achievement of the credit score required for the fulfilment of the curriculum and completion of studies. Detailed rules and the credit score required for advancing to the next study level are stipulated in the study and examination codes. In courses, the accumulation function is reflected in the gradual inclusion of completed tasks and their evaluation in the point system described in the previous paragraph.

## Transfer Function

The credit transfer function enables the recognition of learning results earned in the preceding studies, informal learning or as part of mobility at a partner school for the courses of the home school's curriculum. The basis is a comparison of the learning objectives of the particular course, group of courses or module of another study programme with the courses of the home school's curriculum. If the learning objectives are identical and therefore the completion of the courses provides a similar contribution towards the graduate profile and fulfilment of the learning objectives within the entire study programme, the credits are fully recognized in the home study programme, and the obligation to study the course or courses at the home school is cancelled.

## The Relationship between the Implementation of the National Qualifications Framework and the ECTS Credit System

If learning objectives are formulated for the whole field in terms of structure and quality set by the national qualifications framework, i.e. through national descriptors for the relevant type of study, we can break down these objectives into the learning objectives of individual courses. Within the curricula, the appropriate number of credits will be allocated to the courses and said objectives.

It is obvious that the creation of curricula and the credit allocation are associated with achieving the desired graduate profile – fulfilment of the learning objectives of a field.

Studying leads both to new knowledge and the acquisition of practical skills – to the practical application of the knowledge acquired. Different courses develop both in varying degrees; while some courses focus on new knowledge, others put emphasis on skill development. Likewise, general competencies are developed continuously during the studies and the effectiveness of their development largely depends on the applied methods of teaching. Education methods and the forms of students' practical activities especially at seminars and workshops significantly influence the development of their skills and abilities.

It is the aim of the National Qualifications Framework that graduates demonstrate the declared



knowledge, skills and general competencies at a certain level; this must be matched by the forms of verification, examination and evaluation. It is clear that different learning objectives will be verified using different methods. The verification of the fulfilment of learning objectives of various courses may therefore differ, may have various components, partial evaluations and may be their combination.

A highly important role in the strategy of achieving the learning objectives of a study field is played by the specification of the curriculum, the sequence of studying individual courses with the help of prerequisites and/or co-requisites. Their definition and recommendation are a significant and effective part of the credit system.

The formulation of the graduate profile by means of learning objectives and in the structure of the descriptors of fields based on the National Qualifications Framework is a practical outcome of the NQF implementation, providing notable information to prospective as well as current students and their future employers. More detailed definition of a graduate's knowledge and skills will be provided in learning goals of individual courses of the appropriate curriculum. These should ideally be formulated in a similar structure. Important additional information includes a list of teaching methods that are employed, tasks given to students, means of verifying learning outcomes and their evaluation.

The European credit system was implemented by schools particularly to support student mobility. Students of foreign schools preparing for mobility – studying abroad – at a Czech school must determine which study programmes the school offers, what the students learn and what are the learning goals. This way, they can find the most appropriate study field based on more information than just its name. Based on a curriculum and the individual course teaching goals, they can prepare a study programme for their mobility to ensure that the maximum possible number of courses correspond to the curriculum of their home school. This increases the effectiveness of their studies. For this purpose, it is mandatory for schools involved in student mobility programmes to provide such information in a Course Catalogue on their website. The ECTS Users' Guide defines the structure of information required on the levels of the institution, study programme/field and individual courses. Looking at the necessary information based on the requirements of the ECTS Users' Guide and the implementation methodology of the National Qualifications Framework, it can be seen that they are consistent and complementary in many ways.

Based on this comparison, it is appropriate to formulate the following practical recommendation. The implementation of the credit system and the National Qualifications Framework on the level of curricula of individual study fields and their courses should be unified. This will allow greater efficiency in processing the required information and help achieve synergy in the fulfilment of requirements for the implementation of both ECTS and NQF.

A major support role in this process is played by the given school's study information system. It is very useful and desirable to ensure that the guarantors of the individual courses and fields manage a single set of information in a pre-defined structure which will be suitable for both uses. An adequate overview can be provided by information published on-line for the purposes of work with learning goals, for mobility planning or for study recognition. The prerequisite, perhaps obvious, is that the information be prepared in Czech and, for the purposes of the ECTS Course Catalogue, also in English.

Utilisation of the structure of required information and methodology recommendations listed in the ECTS Users' Guide can thus become effective guidance and often also an inspirational tool for preparing and organising informational documents and for the work of academics guaranteeing their content. The synergy of both processes is apparent. These efforts could help achieve the standard



required for the awarding of the ECTS label or, on the other hand, support the implementation of the National Qualifications Framework on an institutional level.

## 2.2 EXPERIENCE OF EDUCATIONAL INSTITUTIONS

editor: Tereza Hájková

### 2.2.1 PALACKÝ UNIVERSITY OLOMOUC FACULTY OF ARTS – PSYCHOLOGY

Klára Seitlová, Vladimír Řehan, Jiří Lach

In 2011, the Department of Psychology at the Faculty of Arts of Palacký University Olomouc was asked to participate in the Q-RAM project. An implementation team of three was assembled and charged with ensuring a smooth introduction of the methodology. It was confirmed during the project that an important element in the composition of the core implementation team is the involvement of the head of the respective department and the Dean of the faculty.

In the implementation of the Q-RAM methodology at the Department of Psychology, our advantage was that a member of the main implementation team was also involved in the definition of descriptors for psychology education. Another benefit lies in the division of psychology itself, as Psychology is both a field of study and a programme. In the implementation, we described all three levels of higher education – bachelor's studies, follow-up master's studies and doctoral studies. In 2011-2012, we managed to implement learning outcomes of the field (detailed description of a psychology graduate at individual levels) up to the level of learning outcomes from courses (description of course knowledge and skills as well as the method of subsequent evaluation). The analysis processed a total of 75 courses of bachelor's studies, 84 courses in follow-up master's studies and 8 courses in doctoral study. The courses are part of accredited programmes and are already taught at the Department of Psychology of FF UP.

Below, we will attempt to describe the process of implementing Q-RAM methodology in simple points.

1. Assembling the main implementation team.
2. Presenting the project to the Department of Psychology, explaining its benefits for the department and expected outputs; this was implemented at several levels of meetings, from the management of the department and the field guarantor to the field sections and the individual members of the department. At regular meetings, everyone was also kept informed on the status and latest results of the implementation.
3. Based on the accredited programme, the main implementation team defined a profile of graduates from the bachelor, follow-up master and doctoral programmes (expert knowledge, skills and competencies).
4. Representatives of the individual field sections were selected (four in total) and assigned the task of communicating with teachers in their field. The broader implementation team created typical examples of learning outcome descriptions for the individual courses. In their sections, guarantors communicated with the teachers themselves in more detail and helped define the knowledge, skills and methods of evaluation for the individual courses. For the definitions of course learning outcomes, the IS STAG internal system was also used.

5. Guarantors of the individual areas submitted summarised outputs for the individual courses to the responsible person from the main implementation team. The finalisation of outputs for the field of Psychology and the individual levels of study was carried out by a single person. To ensure software availability, the Excel and Word applications were used; for this reason, it was necessary to nominate one responsible person to make the final summary of the project while also conducting a partial review of all courses.
6. After course learning outcomes and evaluations for each section were defined, course outcomes were compared to the graduate profile. Because the learning outcomes of the courses corresponded to the defined profile, it was not necessary to adjust either the profile of graduates or the courses.
7. Comparing the results of the Department of Psychology with the education descriptors for psychology.
8. At the end of the implementation, the outputs were presented at department meetings and are part of all subsequent discussions on studies at the Department of Psychology at the Faculty.

Overall, the implementation of the Q-RAM methodology was beneficial particularly in the following aspects:

A detailed reflection on the compatibility of the implemented study programme, Psychology at the Faculty of Arts at the Palacký University Olomouc, with the national (and international – see EURO-PSYCHOLOG) qualifications framework and the field of psychology education. This reflection will then help eliminate redundant disciplines, if any, and, on the other hand, reinforce instruction where the requirements of the major programmes would be inadequately met.

A clear and immediate benefit lies in the clear formulation of learning outcomes for individual disciplines on the level of knowledge, skills and methods of their evaluation.

Reopening the discussion on continuity and prerequisites of individual courses.

Motivation for establishing a methodology of minimal standards for outputs and requirements for individual courses regarding the amount of credits and course type.

Reopening the issue of course evaluation.

Preparing input data for programme re-accreditation.

Comprehensive overview of courses and their continuity usable both by psychology teachers and students.

Some shortcomings were also detected in the implementation:

Ambiguous methodology for the description of learning outcomes (which has already been mitigated with the creation of the comprehensive Recommendation for Teachers: How to Write Learning Outcomes for Study Fields and Courses; it was unfortunate that some teachers had to adjust their outcomes repeatedly, especially in more stressful time periods).

Insufficient support of software tools, no link to the internal IS STAG system.

In conclusion, the opening of the discussion on individual courses in the study of psychology at the Faculty of Arts of the Palacký University did not result in a one-time description, but launched a live process of discussion on learning outcomes which remains even after the implementation of the Q-RAM methodology has finished.



## 2.2.2 JAN EVANGELISTA PURKYNĚ UNIVERSITY IN ÚSTÍ NAD LABEM, FACULTY OF ARTS – HISTORY

Michaela Hrubá, Jiří Koumar

At the Faculty of Arts of the Jan Evangelista Purkyně University The implementation was conceived as a comprehensive verification of descriptors up to the level of individual courses in the study field of History in bachelor's and follow-up master's studies. In this process, current course annotations were innovated; they were updated and supplemented with the "learning outcomes" item.

Founded in 2006, the Faculty of Arts at UJEP has only been in existence for five years. The project of the faculty was linked to a new accreditation of all courses and fields in a fully structured form of study. In 2008, the university underwent full evaluation of all fields of activity, with subsequent individual check-ups planned after every two years (the first in 2010). Experience from these processes, collected data and in particular the ongoing evaluation and assessment of the course of study created a good foundation for potential involvement in the implementation.

When the university was asked to participate in the implementation, a major role was played by the interest of the university's management in doing a pilot review (on the sample of a selected faculty and selected study programme) of its preparedness for the new MEYS requirements on study programme accreditations as expressed in the draft amendment of Decree No. 42/1999 Coll. on the content of accreditation applications. The purpose was to verify the time requirements and administrative workload of the formulation of new attributes for accredited study programmes (particularly the formulation of learning outcomes on the level of courses) as well as the preparedness of the university's information system for this step.

Neither the qualifications framework nor learning outcomes had been actively and directly reflected so far, in spite of several accreditation and evaluation events organised at the whole university and the faculty. For these reasons, the implementation of the pilot run was a new experience for a substantial part of the Faculty of Arts of UJEP and the academics involved in the project. The utilisation of outputs from previous activities was therefore only possible to a limited extent. Such activities only partially outlined learning outcomes in the form of specification of the general competencies of graduates in individual courses and fields of study.

In the university as a whole and all its parts, bachelor's, master's and follow-up master's study programmes use a credit system. The credit system follows the principles of the European Credit Transfer System (ECTS). The recommended annual curriculum is assigned a value of 60 credits, distributed among the courses of the curriculum in accordance with the required workload. Credit values assigned to individual courses are always whole numbers; the number of credits is not dependent on how well the student passes the given course. In doctoral study programmes, progress against the individual study plan of the student is checked by the appropriate board of the field of study and the credit system is not used. Since 2007, UJEP has been publishing an Information Package (Information about the Institution, Information about the Structure of UJEP and Information for Students) in accordance with ECTS Label criteria. Together with other universities using IS/STAG, UJEP implemented database changes in its Course Catalogue and Information on Degree Programmes in accordance with ECTS. In 2009, the university received the DS Label given by the European Commission in the Bologna Experts 2008-2009 project as a certificate of its readiness to meet the common goals in the European tertiary education space. A more comprehensive specification of learning outcomes was therefore only created through the preparation of ECTS Package Information

at UJEP Ústí nad Labem (2008). In this university-wide activity, learning outcomes were tentatively defined at the Faculty of Arts in a relatively complete form for the first time, as part of the mandatory item of the presentation of each course, Acquired Competence. Admittedly, however, not all teachers managed to provide a comprehensive and coherent formulation of learning outcomes. In a non-negligible number of cases, the formulation of competencies is merely a formal and externally motivated presentation of learning outcomes.

Academics working at FF UJEP were originally thinking of the Q-RAM project only as part of the changes of the accreditation procedure which are being prepared, or the changes related to the preparation of the new Tertiary Education Act. In this context, the project was (and in many cases probably still is) perceived rather negatively, particularly with the predominantly adverse reactions to the draft versions of the Act published so far and the surrounding debate.

The situation was different on the level of UJEP management who were informed about the concept of IPn including the Q-RAM project, which was also reflected in the formulation of the Long-Term Plan of UJEP for 2011-2015 (including its Update for 2011). These documents directly refer to Q-RAM in Section 2.5.4: "After the outputs of the IPn Q-RAM project are made available and reflected in the accreditation process, implement the National Qualifications Framework for Tertiary Education at the university."

The list of people involved in the project's implementation at the Faculty of Arts includes direct collaborators (implementation experts) as well as selected academics. The selection was based on expertise and experience with overseeing the teaching of the appropriate study field. The collaborators were coordinating their own preparation of learning outcomes on the level of groups of courses that are thematically linked in the curriculum. For the assessment of the implementation from the perspective of study-related organisational issues, the head of the faculty's student services department was also included among the collaborators; a major role in the discussion on the form and method of implementation was also played by students and their representatives from the student chamber of academic senates of the faculty and university.

The debate between faculty members involved in the implementation project had three distinct stages in which the approach to performing tasks arising from the project requirements and the reflection of the whole issue of the qualifications framework (and particularly the approach to the formulation of learning outcomes) changed significantly. The first stage consisted of the initial presentation of the project and formulation of the goals and tasks of the implementation. At first, this discussion on the university and faculty level was part of the regular meetings of the institution's bodies (the Rector's and Dean's Collegium, the Academic Senate of the Faculty of Arts, meeting of the Faculty management, Scientific Council of the Faculty of Arts, meeting of the History Department of the Faculty of Arts). The initial discussion that took place before the pilot implementation of the project focused on the involvement of the Faculty of Arts showed generally low awareness of the issues of the qualifications framework among the academic staff. One of the important tasks that had to necessarily precede the implementation itself was therefore a more detailed presentation of the issues related to the qualifications framework. It also proved necessary to engage in a long and patient discussion at all levels of the faculty, a task the expert team did not initially anticipate in such scope. The most thorough presentation of the issues and related discussions were mostly focusing on the faculty's academic employees who were supposed to be involved in the implementation in the form of creating input material for the individual courses.



In the second stage, the main general implementation documents were processed (learning profile, learning outcomes formulation matrix, etc.) for the selected study field, History. In this second stage, the discussion, at first mostly a one-sided presentation of the requirements of the qualifications framework, became a genuine and fruitful debate between the members of the Department of History who were realising their own implementation. On the basis of the documents for pilot deployment (PIMPL), a draft study profile for the field was created, focusing on the general learning outcomes in the FF UJEP environment and the updated curriculum of the field. The draft of this core document was subjected to thorough discussion by the members of the Department. Comments and corrections resulting from this discussion became part of a specific profile of the implemented study field, which fairly closely corresponded to the specifics of the realisation of the History study field at the Faculty of Arts at the university in Ústí nad Labem. At the same time, however, the draft maintained a link to more general field descriptors which were formulated very thoroughly for the education of history. Similarly, there was also a discussion on the proposed matrix, which was designed as the basis for a unified formulation of learning outcomes from individual courses.

The most valuable stage of the implementation was the third, in which learning outcomes were processed on the level of individual courses. The result of this phase was not only a relatively unified spectrum of learning outcomes on the level of individual courses, but also further specification and a shift in the formulation of the general study profile and modifications of the overall curriculum.

At first, the individual academics approached the pilot implementation project and the issue of the qualifications framework only very carefully and with reservations. Having only vague and varied ideas of the whole issue, they were linking the task of preparing a study profile and in particular the need to formulate learning outcomes rather generally to the needs of the university's information system and the creation and adjustment of the syllabi of the individual courses. In this respect, a negative role was played by the teachers' previous engagement in the creation of the ECTS Package Information and regular requests to update the data in the university's information system. Certain change was produced by the individual creation of learning outcomes on the level of courses implemented on the basis of the study profile discussion as well as model examples of learning outcomes that were created for the selected courses. Most teachers combined this activity with a review of information and syllabi of the individual courses; a significant portion of the teachers of the Faculty of Arts involved in the project approached this task with a deeper reflection on the so far rather formal description of the content of individual courses from the point of view of competence of graduates. A major factor was also the possibility of comparing learning outcomes and demands on students within a study field. There was also another very pressing issue that had to be resolved, as students in the 3rd and 4th year of the bachelor's programme were overwhelmingly unable to finish their studies. Even though many of them submitted their theses, they failed to complete all mandatory examinations on time and thus finish their studies. In the discussion on the innovation of syllabi with the purpose of formulating learning outcomes, a key question emerged asking whether the students in bachelor programmes weren't overburdened by the particular requirements of individual courses, which might be one of the main reasons for their inability to finish their studies in the expected 6 semesters.

Throughout the implementation, the focus of the discussion changed considerably, and so did the ratio of involved stakeholders (particularly implementation experts and participating academic staff from the faculty). In part, this transformation was already indicated in section 2 above. This procedure can also be broken down into stages of project implementation:

The process of implementation up to the level of learning outcomes from individual courses proved to be very time-consuming under the conditions of FF UJEP, even though it only involved one of the faculty's study fields. These time requirements were influenced particularly by the following factors:



Lack of documents that could be used as direct input in the implementation of requirements of the qualifications framework.

General unpreparedness of academics to formulate learning outcomes.

Workload of teachers and their teaching and other duties throughout the semester; for a general implementation of the framework, it will be necessary to plan more demanding work for the period between semesters (for the most part, input documents were prepared in the summer months).

Experience from the implementation of a single study field clearly shows that unless enough time is dedicated to training and discussion at the department, the preparation of input documents will only be very formal. Early on, there was a stimulating discussion in trying to determine the purpose of the whole effort, i.e. why the writing of learning outcomes is useful. There was clear consensus that the issue might lead to the same effect that was criticised e.g. in the preparation of education programmes in primary education, many schools simply hired external agencies to create these documents, and it is now apparent that the reform as a whole did not really benefit our education. The turning point came when the discussion became specific and started dealing with the issues of continuity of individual courses or demands on students; the accumulation of demands on students in the first semesters of bachelor's studies was deemed undesirable and all of these initiatives were linked to the success and failure rate of our students and the permeability between bachelor's and follow-up master's studies. An important role in the discussion was certainly played by the presence of guarantors from the project team (Doc. Málková and Mgr. Černíkovský), who were able to make the source documents and the methodology of their use accessible to the academic staff. Another important factor was that the creation of these documents for the field of History involved renowned and respected historians and experienced university teachers, and their contribution helped improve their quality.

From the experience of this project, it can be estimated that all of the faculty's study fields could be prepared for the qualifications framework in 1–2 years. On behalf of the stakeholders, collaborators of the project and colleagues participating in the implementation, the following recommendation could be formulated:

Ensuring higher awareness of the progress of implementation of the qualifications framework at Czech universities; an informational forum or website devoted to the issue would be useful. Emphasis should also be placed on the consistent formulation of the purpose of the qualifications framework both in relation to the individual universities and tertiary education in general. For the individual departments providing education in the appropriate areas, it is undoubtedly useful to formulate learning outcomes to support the creation of transparent profiles of study courses and fields which will be easily readable for those interested in studying.

Enough time for the university.

Source documentation providing sufficient guidance.

If the introduction of the qualifications framework is to be useful and contribute to the development of tertiary education, it must be ensured that the process isn't merely a formal affair.

Evaluation of the implementation by MEYS should be continuously published, and the discussion of this process at universities should not be limited in any way.

From the experience of previous years, it is clear that universities would welcome a thorough analysis



of the level of knowledge of secondary school students for whom the individual study fields are being prepared; specifically, it would be beneficial to identify factors contributing to the decreasing levels of knowledge of secondary school students, a trend that seems obvious to most universities.

## 2.2.3 CHARLES UNIVERSITY IN PRAGUE, FACULTY OF ARTS, FACULTY OF HUMANITIES, PROTESTANT THEOLOGICAL FACULTY – SOCIAL WORK

Josef Kružík, Ondřej Fischer, Oldřich Matoušek

In 2011, the project was implemented by Josef Kružík (Faculty of Humanities), Ondřej Fischer (JABOK and Protestant Theological Faculty) and Oldřich Matoušek (Faculty of Arts). In this text, they are referred to as the “team”.

The objective was to test the methodology of the construction of an education programme based on defined learning outcomes, i.e. the qualifications framework (hereafter “Q-RAM”). The team also took into account the Long-Term Plan of Charles University for 2011-2015, which anticipates the use of qualifications frameworks freely linked to the accreditation process without creating an unnecessary bureaucratic burden on teachers. The reference matrix used in the project was a document created by Libor Musil (FSS MU Brno) and Lenka Krhutová (FSS OU Ostrava) which the team considered a proposal of field descriptors for social work, as it has not yet been reviewed by stakeholders among academics and practitioners. The relevant historical context of the project also included the Minimum Standard for Education in Social Work used for the approval of study programmes by the workgroup for social sciences of the Accreditation Commission of the Czech Republic roughly for the last ten years. (This standard was originally formulated by the Association of Social Work Educators; the accreditation process uses a modified version.) In the future, work on the Q-RAM project may be used as one of the inputs for correcting the current format of the Minimum Standard for Education in Social Work.

- The three study programmes in which Q-RAM was tested are all different. The team believed that these differences were a benefit. Work on the Q-RAM project was perceived as an opportunity to explore these differences, which should also be maintained in the future.
- At the Faculty of Arts of Charles University, social work is taught as a bachelor's and master's study programme. At the Faculty of Humanities, it is only provided on the master's level, where the focus is on management and supervision. At JABOK and the Protestant Theological Faculty, the bachelor study programme links social work with pastoral activities. All three educational institutions have a long tradition and have repeatedly successfully passed the accreditation process.
- The pilot implementation was realised to the level of learning outcomes for selected courses, 150 in total. The overall number of participating teachers was 30.
- The implementation started with the definition of a graduate profile for the individual study programmes in terms of learning outcomes. Afterwards, summary descriptions of course content were constructed with defined output knowledge, professional skills and, if applicable, also competencies transferable outside the actual profession of a social worker. (Differentiating between the latter two output categories was not easy.) In the next phase, learning outcomes of the individual courses were compared to the graduate profile and proposed field descriptors.
- This comparison had the form of discussions within faculties/departments. One of the meetings also included a debate between interested representatives of all three faculties. This



professional conference was an opportunity to discuss the construction of this type of educational programmes with actual practitioners. The implementation of the results of the Q-RAM project was also debated at the General Assembly of the Association of Social Work Educators and at a meeting of the Council for the Development of Social Work.

- In some cases, the discussions led to adjustments in the content and redefinitions of the learning outcomes of some courses. The implementation showed that the need to define learning outcomes stimulates teachers to apply a new perspective to the process of teaching and the roles of the tutor and the student. Some teachers expressed their satisfaction, saying that Q-RAM helped them break out of the routine they found themselves regressing into in their teaching without such reflection. It was clear that Q-RAM makes the education process clearer and more focused not only for managers or teachers, but also for students.
- It was interesting to compare learning outcomes in courses of programmes with defined field descriptors. Some of the requirements of field descriptors were not met by either the current or innovated learning outcomes (e.g. critical work with the field theory, the relationship between practical skills and the general objectives of the field). On the other hand, some types of learning outcomes in current or innovated courses do not have an equivalent on the level of the proposed field descriptors (a social worker's self-reflection of their position on a team and the network of institutional relationships). It also became clear that it is possible to specialise study as early as on the bachelor level, which the draft of regional descriptions does not assume.
- A certain weakness was the inadequate input of practitioners in the process of constructing an innovated educational programme. Discussions with them revealed only some of their expectations. In the future, it would be desirable to verify the requirements of practice through targeted research (bearing in mind that the practitioners' perspective may be limited by "professional blindness".)
- The implementation showed that the used methodology of the Q-RAM project has its drawbacks. With its help, it is possible to construct professionally oriented bachelor's programmes at a fairly adequate level; it becomes more difficult, however, on the master's level and on the level of a doctoral programme, where the team believes the current methodology cannot be used to adequately describe the desired outcome without erasing the substantial difference between postgraduate and undergraduate study. The cause isn't so much the fact that most faculties of Charles University do not quantify doctoral studies with a (credit) system (even though the strong link between the credit system and the overall concept of the qualifications framework may cause problems), but rather that doctoral study should not be based on outcomes from course teaching, but on outputs from the student's independent research work, primarily reflected in the hard-to-quantify progress of their dissertation thesis, publication activities and involvement in the broader scientific community of the field through active participation at conferences or foreign internships. If doctoral study is to be described through learning outcomes, it will be necessary to develop a methodology for formulating learning outcomes in the fields listed above which are different from learning outcomes in undergraduate courses.
- It is evident that Q-RAM is not an adequately complex tool for the reflection of all important aspects of the educational process. Education shapes attitudes and values. Schools have certain organisational cultures which include, among other things, the relationships and links between individual teachers and between teachers and students. The relations to

students may continue for a long time after studies finish and influence the working career of the graduates.

- Experience of the team shows that the Q-RAM methodology is suitable for the self-assessment of an educational institution/faculty/school. External analysis will always carry a risk unless a system is created to would guarantee the independence of the evaluator on the given educational institution and the use of verifiable assessment procedures.



## 2.2.4 CARITAS – COLLEGE OF SOCIAL WORK, OLOMOUC SOCIAL WORK

Martin Bednář, Miloslava Šotolová, Daniela Růžicková

The CARITAS College continually searches for opportunities to improve the quality of its teaching. One of those was involvement in the Q-RAM project, from which we expected significant help in the definition of a new curriculum of our accredited educational programmes. All of that is reflected in the considerations regarding a modern version of our curriculum; the expected outputs of this project were fully in accordance with our intention to change the current curriculum of the Charitable and Social Work educational programme.

Before joining the PIMPL project, we expected to gain useful experience with designing study programmes and fields of study. With this work, we also expected subsequent improvements in the current level of teaching of the CHASOP (Charitable and Social Work) programme that was selected for the pilot phase. This was one of our main motivators.

All the activities above and their fulfilment, preparation and further development also help us succeed in the difficult competition with all universities and colleges, which is absolutely essential today due to the low number of people interested in studying and the large offer of all types of schools. Our motivation was to prepare a specific and unique profile of graduates and prepare a CHASOP educational programme that would be attractive and of a high quality.

### STAFF INVOLVED IN THE IMPLEMENTATION PROCESS

The project was implemented under the leadership of members of an implementation team consisting of 3 internal employees (guarantor of the field, head of the practical education centre and a teacher of professional courses) under the auspices of the school's management. Members of the implementation team primarily gained information about the Q-RAM project at regular meetings with the director of the CARITAS College, Mgr. Martin Bednář, Ph.D., the project's guarantor for the field of Social Work and expert of the implementation team. In the early stages of the Q-RAM project, the members of the implementation team had at least basic information on the nature, philosophy and goals of the project.

The project involved all teachers of the CHASOP study programme (both internal and external). There were 15 internal and 14 external teachers involved. Teachers and academics (internal and external) were informed about the project in detail and collaborated in the creation of outputs. Compared to external teachers, the internal staff was more active and flexible in performing the assigned tasks; for many of them, the philosophy and goals of the project were a natural part of their work and they identified with the project. In the case of external teachers, cooperation was particularly time-consuming, as the current external teachers at the CARITAS College are primarily experts in their respective professions and as such are very busy. For this reason, communication and agreeing on deadlines was sometimes difficult; the project required more detailed and often individual explanations of the specific requirements of the various tasks.

## COOPERATION WITH OTHER SUBJECTS

Current students in the third year of the Charitable and Social Work educational programme were asked to help with the project, and so were the fresh graduates of 2011. 21 students from the third year (group 3A) and 36 graduates accepted the offer. They were given the new graduate profile and asked to comment on the outputs of the programme, i.e. on what students know and what competencies they have, as well as any special skills and knowledge.

We similarly contacted the employers of our graduates, both prospective and current. Specifically, this was a selected group of collaborating companies which provide practical education for our students. We decided to ask them for their opinion and comments not only about the innovated graduate profile, but also the outputs of the field at the level of individual courses. For us, employers are important stakeholders who are best aware of the needs of the field – the clients, workers, the region and society as a whole – and which create demand for graduates from our school.

Activities of the Q-RAM project also significantly contribute to our shared long-term debate on how one recognises a good social work student and where and how should the school and employers lead him or her through practice. Thanks to our participation in the project we can have a deeper and more systematic analysis of the current status of teaching – that is, what the graduates should know and be able to do, how we transfer this knowledge, and how we verify they have the required competencies.

## RESULTS OF THE PILOT IMPLEMENTATION

In the pilot implementation process, 3 important documents were created at our institution:

- A graduate profile and learning outcomes on the level of the three-year CHASOP programme (1 document)
- Learning outcomes on the levels of individual courses, years and semesters (6 documents)
- Comparison of outputs on the field level with the education descriptors for Social Work (1 document)

Thanks to the two-day initial training on the pilot phase of the Q-RAM project which took place in Brno in March 2011, the members of the implementation team had no significant problems in understanding the character and mutual interactions of the individual parts of the qualifications framework. Particularly due to the provided methodology on the formulation of learning outcomes and other supporting documents, work with the qualifications framework concept was not very difficult. Naturally, it was also necessary to present the qualifications framework as a tool for creating national descriptors to other involved stakeholders such as teachers, employers and students. This was also achieved without any major problems, as after the initial training, everyone involved quickly became familiar with the concept and terminology of the qualifications framework and used them naturally in the activities of the Q-RAM project.

To some extent, we had a great advantage in the work on creating descriptions and learning outcomes of the educational programme, as our school already had a graduate profile with outputs on the level of the field. Members of the implementation team updated these documents with the results and conclusions reached through joint discussions with internal and external teachers. Some outputs



were reformulated and sorted by courses; some definitions were changed. The section of “Special Knowledge and Skills” underwent the largest number of changes, as our work on the Q-RAM project prompted us to try to also include areas which we had neglected before and which the document did not mention. This part wasn’t very problematic for us. These were, for example, outputs related to the highly discussed topic of the identity of social work as a field. The graduate’s knowledge of the current status of social work as a profession in Czech society, awareness of his or her responsibility in helping shape its image and future as well as assertive and presentation skills needed to defend the interests of the clients and the profession as such are all issues that we together with the students and employers believe form integral parts of the education of a graduate from CARITAS College in Olomouc.

## PROBLEM AREAS

At the beginning of the project, we primarily wanted to motivate teachers. We tried to explain the multiplication effect for our institution and the CHASOP educational programme in particular, and looked for positive lessons from the project which teachers could apply in their everyday work. We assume that a joint discussion of teaching methods and the structure and continuity of individual courses will become part of the next staff meeting away from the school. Many interesting and important topics arose from the Q-RAM project, and these must be discussed. These are in particular related to the selection and composition of courses, their continuity, time allocation, adding new courses to the schedule, etc.

Another complicated task was providing the rationale for the necessity of the Q-RAM project and the efficiency it should bring. The concerns of the teachers were based on past experience, as they were repeatedly involved in other projects and activities which often required a lot of work and were very time-consuming. The subsequent efficiency and added value of the project already apparent in the project outputs will be presented once again to internal and external teachers at meetings or the already mentioned conference outside the school. This is naturally linked to a change in the structure of courses in the CHASOP educational programme as well as the introduction of new teaching methods and courses important for the field of social work.

We also saw problems in the formal definition and means of recording the individual outputs. We first had to think about how to obtain the information from all involved stakeholders, how the teachers should write it down and what would be a suitable form for the end user. In this respect, we have been given room for creativity, but it would have been helpful to have tables or documents provided by the organisers of the project for the recording of such information, at least for inspiration.

In early September, we were then sent the methodological document “How to Write Learning Outcomes for Study Fields and Courses,” from which it also followed that learning outcomes must be supplemented with teaching methods and means of verifying what the students know and can do. The methodology was a useful tool, but we only received it when the writing of learning outcomes was already underway. For this reason, we had to meet with the teachers again and provide the new information and documents. Those were supposed to help them and make their work easier, but any other, additional change while working on the project is a burden for everyone.

We see a great problem in the project’s time requirements. For this project, an implementation team was assembled from the staff, but for easy progress, overall coordination and efficient organisation, it would certainly be more effective to provide more staff capacity.



Some problems arose during the implementation of the project, but we tried to prevent them. In advance, we set up a time schedule and a plan for the individual activities and delegated responsibility for the ongoing implementation of project activities. Problems naturally appeared whenever we had to devote time to the everyday work, operational and organisational duties of the school, which pushed the project away from the centre of our attention. We also believe the project is disadvantaged by its timing. In the period from April to late October, we were unable to work on the project in the months of July and August, as well as May and June when graduation and entrance examinations as well as other regular exams take place, with great demands on the time of all employees of the school. Even September, with its heavy workload related to the beginning of a new school year, did not give us enough time for careful study of all materials and good preparation.

## BENEFITS OF THE PILOT IMPLEMENTATION

The philosophy of the CARITAS College is to keep improving the quality and level of education. The outputs of the Q-RAM project at our school are very useful for us and revealed further opportunities for improving our teaching and approach to students, adjusting it and making it more efficient.

The results showed that some courses are not linked to one another; in some cases, students first learn their specialisations and only then the basics of the field. Some topics are repeated across several courses and the teachers do not talk about it together – in some cases, they are not even aware of it. We have a weakness in general courses that form the basis of the profession, e.g. philosophy, in which little emphasis is placed on linking the knowledge of these fields to the theory and practice of social work. Some courses have overly high time allocations, while the time demands of other professional courses are understated.

The structure of language teaching is another weak spot. There is no clear and unified concept of the content of the course; it's entirely up to the teacher to select topics that will be discussed.

Through the mapping of teaching methods and the definition of verification possibilities, we determined which forms of teaching are employed most often; for further education of our employees, we can take advantage of further training and introduce new methods that will benefit our students.

## CONCLUSION

We consider our participation in the Q-RAM project a very valuable and important experience. With the individual activities, we were forced to update some documents and discuss the CHASOP educational programme in great detail. The project showed us the weaknesses of our system that we are aware of and that we now can address to make the whole structure of the programme perform better.

Thanks to the involvement in the Q-RAM project, we reopened the discussion on programme outputs as well as the quality of teaching in individual courses. Teachers were actively participating in the project and also pointed out deficiencies in the education plan time schedule themselves. It is a good foundation for further work with the new curriculum not only of CHASOP, but also with the second programme accredited at the CARITAS College – Social and Humanitarian Work.

A great task we have identified lies in work with our staff, particularly external teachers. This means,



for example, providing information after recruitment or termination of work for our institution, the introduction to the philosophy of the CHASOP programme and an explanation of the context of specific courses the external teacher is responsible for in the overall course structure, links to theory and practice.

Another useful output lies in collaboration with other participants and their involvement in the process of increasing the quality of education through the submission of comments and new ideas. We will try to make this feedback process more formalised and efficient.

## 2.2.5 UNIVERSITY OF ECONOMICS IN PRAGUE – ECONOMICS

Hana Mikovcová, Savina Finardi

### INTRODUCTION TO THE PROJECT

The University of Economics has been monitoring the Q-RAM project since its inception. The decision to participate in the project was the idea of former Vice-Rector for Teaching and Study Affairs doc. Felix Koschin; the preparation of the Economics and Economy education field involved the Vice-Dean of the Faculty of International Relations, Jiří Zeman. The university became involved in the pilot implementation in autumn 2010.

### REASONS FOR THE PILOT IMPLEMENTATION

The reasons that led to involvement in the Q-RAM project were both internal and external.

A main internal factor with significant influence was that the university holds two prestigious certificates: “ECTS Label” and “DS Label” for 2009-2013. The “ECTS Label” certificate is awarded for the correct implementation of the European Credit Transfer and Accumulation System in all bachelor’s and master’s programmes. The “DS Label” recognises that all graduates receive a Diploma Supplement. With the preparation for this certificate over the last several years, the university gained substantial experience with describing courses and creating syllabi based on learning outcomes. As such, all teachers of the university should be familiar with the basic terminology of the project (qualifications framework, qualification, learning outcomes, knowledge, skills and competencies).

Beyond the framework of the already described individual courses, the university also believes it would be useful to create profiles for study fields with links to appropriate fields of education. With such field descriptions (subsequently published), the university primarily anticipates clear communication with all relevant users of the field descriptions – prospective and current students, graduates, employers and evaluators.

Another expected outcome is an improvement in the structure of the individual study fields, clarification of specific contributions of the individual courses to the respective study field and improving the permeability of studies. This point should among other things become the basis for internal and external assessment of the quality of study fields.

Another significant factor for involvement in the pilot implementation was the effort to obtain prestigious international accreditations, the evaluation criteria of which primarily include the objectives of programmes, fields and courses and their expected outcomes based on knowledge and skills, teaching methods and means of verifying knowledge and skills. Examples of such accreditations include the international EPAS accreditation, i.e. the international EMFD (European Foundation for Management Development) accreditation system, awarded to the International Trade master’s programme of the Faculty of International Relations, taught in Czech, and the same faculty’s master programme titled International Business – Central European Business Realities, fully taught in English, as well

as the ACCA (The Association of Chartered Certified Accountants) accreditation of selected courses provided at the Faculty of Finance and Accounting as part of the ACCA qualification.

External factors that influenced the university's decision about the pilot implementation include in particular the published outline of the Tertiary Education Act and specifically the sections relating to tertiary school qualifications, the qualifications framework, the system for ensuring quality of a tertiary school and its accreditation.

An argument supporting the notion that becoming involved in the pilot implementation was the right decision for the university could be the fact that on 1 December 2011, Decree No. 42/1999 Coll. on the content of study programme accreditation applications came into force, as stated in the amendments of Decree No. 312/2011 Coll., specifically Section 2 (d) and Section 4 (a) and (b). Even without the involvement of some faculties in the pilot implementation, this means that the university must finish profiles of all fields using the Q-RAM methodology within 4-5 years (corresponding to the expiration period for the study field accreditation).

The university was surprised by one of the requirements of MEYS which became apparent in the writing of the annual report for 2011, specifically the need to state how many fields are described using the Q-RAM methodology.

## PROGRESS OF THE IMPLEMENTATION

The implementation at the University of Economics can be divided into several phases. These are:

- Discussion on the level of the university expert team and the Q-RAM implementation team. In this phase, the objectives of the Q-RAM project were clarified together with the reasons for becoming involved in the pilot implementation. On behalf of the university, several rounds of discussions were attended by the Vice-Rector for Teaching and Study Affairs, the head of the Teaching Department, the student secretary of the Rector and the Vice-Deans for Teaching of all faculties.
- Discussion on the Vice-Dean level, clarification of opinions of the faculties, selection of fields for pilot implementation. Here it should be noted that in these internal discussions, some faculties completely distanced themselves from the Q-RAM project while others postponed the decision on its implementation until 2012. In the end, only the Faculty of International Relations and the Faculty of Business Administration fully participated in the pilot implementation, as well as several field guarantors from the Faculty of Finance and Accounting. 43 % of the university's study fields were described at all levels.
- First draft of field profiles. In this stage, Vice-Deans for teaching together with the guarantors of individual fields collaborated on field profiles and a formulation of learning outcomes, with mutual consultations.
- Discussion with students and partners, adjustment of profiles. The first drafts of the field profiles were discussed with groups of students of the respective fields; to some extent, their comments influenced the terminology used for knowledge and skills. Other stakeholders involved in this stage were the partners of the International Management study field, whose comments served as feedback not only for the described knowledge and skills, but particu-



larly for the profiles of field qualifications.

- Working seminar with course guarantors with participation of the implementation team. The seminar took place at the very end of 2011. Its objective was to evaluate the benefits of the pilot implementation and its problems and present them to guarantors of fields not yet involved in the pilot implementation.
- Adjustment of the structure of the selected field, Arts Management. Due to the fact that in 2012 the university is submitting its application for the renewal of the accreditation of Arts Management, experience from the pilot implementation was fully utilised in the processing of accreditation materials. Thanks to the pilot implementation (PIMPL), the structure of the field was also modified; graduate profiles and the profile of a typical candidate in this field were also improved, something not required by PIMPL. This information is currently being used in the adjustment of the admission procedure for the Arts Management field, expected to be implemented in the 2013/14 academic year.

## EXPERIENCE FROM THE IMPLEMENTATION

The basic experience of the university with PIMPL can be summarised as follows:

In the implementation, support from management and the individual faculties is indispensable. Without it, all that is achieved are descriptions of ideal learning outcomes which, however, will not be fulfilled or evaluated for given fields or courses.

In the creation of field profiles, it has proven useful to follow this sequence: create the profile of a typical graduate, the profile of a suitable candidate in the field (and consider a change in the admission process), define the field's objectives and features distinguishing it from other fields taught at the school, define key knowledge and skills in the field (not insisting on detailed description of all knowledge and skills, only providing a reasonable number), describe learning outcomes for all courses and evaluate the contribution of learning outcomes for courses with regards to the structure of learning outcomes on the level of study fields.

In the discussions of learning outcomes, a negativistic approach proved successful. It is useful to show examples of well-chosen formulations of knowledge and skills, but not for courses of the school. It is better to show an example of a bad (too general, vague) formulation of a specific course (related courses with prerequisites) and get the participants at the seminar to create their own; this approach eliminates potential mechanical acceptance of established taxonomy and brings focus on content instead of form. It is also advisable to make the participants see learning outcomes from the perspective of a student, not a teacher.

## THE FUTURE AT THE UNIVERSITY OF ECONOMICS

The university expects that in the 2012/13 academic year, profiles will be created for all of its study fields and the verification of syllabi of all courses (emphasising learning outcomes) will be underway, regardless of whether the individual faculties are or are not involved in the pilot implementation. The reason is not just the Q-RAM project itself; the university also assigns very high priority to the



renewal of the ECTS Label certificate for which it will be applying in 2013. All the study field profiles and course syllabi will be published in the ISIS (Integrated Study Information System).

## 2.2.6 UNIVERSITY OF TECHNOLOGY IN BRNO, FACULTY OF BUSINESS AND MANAGEMENT – ECONOMIC FIELDS

Vojtěch Bartoš, Stanislav Škapa

### BASIC DATA

Expert team of the implementation:

- **Prof. Ing. Mária Režňáková, CSc.**, Vice-Dean for Research and Doctoral Studies, Statutory Deputy Dean of the Faculty
- **Doc. Ing. Vojtěch Bartoš, Ph.D.**, Vice-Dean for Student Affairs
- **Doc. Ing. et Ing. Stanislav Škapa, Ph.D.**, Chairman of the Chamber of Employees of the Academic Senate of the Faculty

Programmes/field: **study programme: Economics and Management**

- Bachelor's study field: **Corporate Economics**
- Follow-up Master's study field: **Corporate Accounting and Financial Management**

**Current number of courses in programme/field:**

- Corporate Economics: 42 compulsory, restricted elective and optional courses
- Corporate Accounting and Financial Management: 36 compulsory, restricted elective and optional courses

**Total number of students of the programmes/fields:**

- Economics and Management Bachelor's study programme, full-time: 1,261
- Corporate Economics: 186
- Economics and Management Master's study programme, full-time: 637
- Corporate Accounting and Financial Management: 53

The original motivation for involving the Faculty of Business and Management (FP) of the University of Technology in Brno in the pilot implementation (PIMPL) was to monitor the trends in the accreditation of study programmes and fields. During the implementation, another motivation became more significant, namely the pursuit of an objective assessment of the current study fields in terms of:

- demands on graduates;

- outcomes of courses of the study plan and their contribution to the graduate's profile;
- effectiveness of the education process;
- motivation of the students for self-study.

Specifically, this meant obtaining a realistic overview of the structure of study plans for the study fields taught at the faculty and utilising this experience in updating current study plans as well as in the preparation of new accreditations for study fields.

At the Faculty of Business and Management, there was some previous experience with formulating study objectives and outcomes as well as individual courses for ECTS (the University was awarded the ECTS Label in 2005). In addition to that, for more than 15 years the faculty has had joint study programmes with the Nottingham Trent University (MBA, Joint Master Degree). This improved its starting position, but only for some of the faculty's academic staff.

## THE PROCESS OF CREATING OUTCOMES FROM THE TEACHING AT THE FACULTY OF BUSINESS AND MANAGEMENT

The work on the formulation of outputs had the following steps:

1. After discussions with faculty management, a study programme and study fields were selected for the implementation. Specifically, this was the Economics and Management study programme with the following study fields:
  - Corporate Economics, a bachelor programme
  - Corporate Accounting and Financial Management, a follow-up master's programme.
2. On the level of the Study Programme Council and with participation of implementation experts, a profile of a study field graduate was created.
3. Introductory seminar for guarantors of study field courses under assessment (using the documents from the qualifications framework pilot implementation training held on 22 March 2011 at the University of Technology in Brno).
4. Experts of the implementation team prepared forms for course guarantors providing characteristics of the acquired knowledge and skills as well as learning outcomes of the appropriate study field. They also defined a vocabulary of terminology for formulating the knowledge and skills for learning outcomes of courses (at that time, there was no methodology for formulating learning outcomes, as it was being created).
5. Based on the graduate profile, every course guarantor defined learning outcomes on the course level (characteristics of acquired knowledge and skills).
6. Learning outcomes of the individual courses were then evaluated by implementation experts; for clarification, these were followed by individual consultations of the implementers with the guarantors.
7. Discussion on experience from the formulation of knowledge, skills and methods for verifying learning outcomes of the courses with their guarantors and teachers.



8. Final adjustment of the learning outcomes of the individual courses and their linking to the graduate profile.

## FACTS AND EXPERIENCE FROM THE PILOT IMPLEMENTATION

A total of 25 members of the academic staff participated in the implementation, including 3 implementation experts. Faculty management, directors of departments and guarantors of the analysed study fields were kept informed about the progress of the implementation. Information was also provided to the guarantors of the courses as well as to the Academic Senate of the Faculty at its meetings. There was also a discussion with the members of committees of final state examinations, particularly about graduate profiles and practical requirements for the knowledge and skills of graduates (for example, this discussion involved directors of financial institutions, even though they weren't informed about the project itself).

Members of the implementation team had to become closely acquainted with the concept of the qualifications framework, which they managed to do in a relatively short time span (sometimes, the terminology was different from that which we are used to, e.g. in "learning outcomes").

During the implementation of the project it became apparent that some courses with high time allocation (number of hours of lectures and seminars) have only a marginal impact on the profile of the graduates. Such cases are significant stimuli for re-evaluating the scope of the course and its credit allocation. In some courses, it was determined that the definition of outputs is only very formal and must be adjusted. The implementation team tried to explain this situation to the course guarantors and help with the formulation of outcomes, but was not always successful. Some guarantors believe that they know best what needs to be taught. This attitude is sometimes hard to overcome, and this issue will have to be addressed systematically on the level of the entire institution. For some academics, particularly those with experience from British study programmes, the principles of the Q-RAM project were received with understanding.

After successful implementation, it was shown that:

- each course has its well-defined place in the faculty's educational system;
- overlaps/repetitions in the content of courses were avoided;
- the students' workload was reduced and academics were given room for further education and research.

We believe that the pilot implementation has great importance in terms of creating curricula for study fields. We see its partial benefits particularly in:

- verifying the "competitiveness" of the Corporate Economics bachelor study field against the national descriptors in the area of economics;
- clarifying the procedure for developing study field curricula. It became apparent that the current system for creating study field plans is not fully functional. Implementation of the principles of the Q-RAM project (achieving greater consistency between the learning outputs of the study field and course) in all fields and courses will lay down systemic foundations for the preparation of high-quality study fields.



In our opinion, the greatest problem of the implementation is in finding links between the content of courses and learning outcomes. In the creation of the descriptions and learning outcomes on the level of individual courses, there were considerable differences between the approach of individual academics; some made an effort to adopt the principles and implement them in their courses, while others responded with rejection or merely formal cooperation.

Note: Findings from the pilot implementation were already used in the preparation of re-accreditations in spring 2012.



## 2.2.7 COLLEGE OF HOSPITALITY MANAGEMENT IN PRAGUE 8 – ECONOMICS

Pavla Burešová, Lucie Plzáková, Jan Žufan

The College of Hospitality Management in Prague 8, spol. s.r.o. (VŠH) is the oldest private non-university tertiary school, certified for providing tertiary education since 1999. There are two accredited study programmes: Economics and Management and Gastronomy, Hospitality and Tourism. Educational programmes in gastronomy, hospitality and tourism at the tertiary level are still something new in the Czech educational system; the field is not yet fully formed or recognised by the wider academic public. This means that in addition to the standard operations and activities of a tertiary school, VŠH is also forced to work on its development and acceptance. For this reason, we welcomed the offer to become involved in the pilot implementation of the Q-RAM project.

In addition to the listed study programmes, VŠH together with the Prague International Business School (PIBS), part of the University of Economics Prague, provides the internationally accredited Master of Business Administration (MBA) programme specialising in hospitality, gastronomy and tourism.

### BASIC INFORMATION ON THE IMPLEMENTATION OF THE Q-RAM PROJECT AT VŠH

#### Expert team of the pilot implementation (PIMPL)

- RNDr. Jan Žufan, Ph.D., Vice-Rector for Development
- Ing. Pavla Burešová, Assistant Professor, Department of Hotel Management
- Ing. Lucie Plzáková, Ph.D., Assistant Professor, Department of Tourism

#### Programmes/study fields involved in PIMPL

- The Gastronomy, Hospitality and Tourism study programme
- Bachelor's study fields: Hospitality; Tourism Destination Management
- Master's study fields: Hotel and Spa Management; Tourism Destination Management

#### Main reasons for participating in PIMPL

**External reasons:** Preparation for the re-accreditation of key fields in 2012 and 2013, providing transparent and understandable information to candidates and representatives from practice.

**Internal reasons:** Developing and utilising an internal quality evaluation system, focusing on the content of education, improving the permeability and gradation of study fields.



## Who was involved in the creation of education descriptors and their adjustment?

- Vice-Rector for Development (responsible for the system of internal evaluation and for accreditation agenda).
- Representatives of the tourism and hotel management departments (departments responsible for study field specialisation).
- Lecturers (course guarantors) – created or innovated methodological sheets of the courses in accordance with the methodology and provided feedback on their application.
- Students – were asked their opinion regarding the content and form of the education and provided feedback.
- Representatives from practice – consultations with the school's partners regarding required graduate competencies.

## Progress of the implementation

- Based on the initial seminar organised by MEYS, there was a discussion on the level of the VŠH expert team with the objective to set implementation goals and schedule, determine responsibilities for the individual stages and involve partners and all groups affected by PIMPL. Selection of study fields suitable for the implementation of the Q-RAM project.
- Discussion at the level of school management and the Rector's Collegium on the impacts of the implementation of the Q-RAM project and its benefits for the school's internal and external needs.
- Work of the expert team on the methodology sheets (syllabi) of the individual courses of selected study fields at the bachelor and master's degree level (78 courses). Identification of overlaps in learning outcomes of individual courses.
- Meeting with the guarantors of individual courses (3 seminars) – procedure for formulating learning outcomes, explaining the purpose and goals of the project, ongoing review of amended methodology sheets and consultations clarifying any uncertainties.
- Meetings with representatives of employers, particularly of major hotels. Discussion on what employers require from VŠH graduates.
- Meeting with the student senate. Debate on the clarity of learning outcomes and the overlaps and continuity of the individual courses within the respective study fields.
- Adding the modified learning outputs of the individual courses and modifications to the profile of a graduate of the Tourist Destination Management study field at the bachelor study level to the accreditation file and submitting it to the Accreditation Commission of the Czech Republic. Adjustment of learning outcomes and the profile of graduates from the Hospitality, Hotel and Spa Management study field and modification of the overall profile of a graduate from the Gastronomy, Hospitality and Tourism study programme.



- Writing a final report, followed by educational activities of the Q-RAM project.



## 2.2.8 VŠB – TECHNICAL UNIVERSITY OF OSTRAVA, FACULTY OF MECHANICAL ENGINEERING, FACULTY OF METALLURGY AND MATERIALS

### Issues:

- Lack of knowledge of descriptors (learning outcomes) – initially also in the implementation team.

Radek Čada

- High organisational workload and time requirements for implementation experts.

Expert team: prof. Ing. Radek Čada, CSc. (on behalf of the implementation team), prof. Ing. Radim Farana, CSc. (initially difficult to convince him to take on the role of implementation expert), prof. Ing. Křiváň (pilot implementation expert) to explain project goals and its necessity.

### 1 Selecting study programmes and study fields for the pilot implementation

- Unwillingness and misunderstanding of the purpose of the project – people do not like Subject *changing Mechanical Engineering and Materials* (they believe works).

#### 1.1 For the pilot implementation at the Faculty of Mechanical Engineering (FS), the following were selected:

**Benefits and priorities:** programme B2341 *Mechanical Engineering* (in a total of 12 study fields, 325 courses, 1,574 students), selected study field: *Construction of Machinery and Equipment* (9R removing 42 credits, students sign quality of the field in the provided year VŠB. The first two years follow the study programme),

- Increasing permeability between courses and the individual levels of analysed study fields.

b) follow-up master's study programme N2301 *Mechanical Engineering* (a total of 7 study fields, 212 courses, 509 students), selected study field of *Individual course Process Engineering* (82 courses, 181 students).

- Increasing the transparency of the curriculum.

#### 1.2 For the pilot implementation at the Faculty of Metallurgy and Materials Engineering (FMME), the following were selected:

learning outcomes and the graduate profile with the academic staff, students, employers.

- a) bachelor's study programme Material Engineering (212 courses, 298 students), selected study field of *Technical Materials* (66 courses, 88 students).

b) follow-up master's study programme Material Engineering (120 courses, 88 students), selected study field: *Accreditation of the Study Field of Tourism*

- Success field: *Accreditation of the Study Field of Tourism* Destination Management on the bachelor study level.

### 2 Individual stages of the pilot implementation of Q-RAM at VŠB-TUO

- a) Based on current forms for the accreditation of study programmes, Prof. Čada created templates for entering learning outcomes (expert knowledge and skills) of a study programme, study field and course, and sent them to all pilot implementation experts.

- b) Pilot implementation experts filled out the received forms by adding learning outcomes (expert knowledge and skills) of the study programme corresponding to the national descriptors, i.e. the minimum standard, and education descriptors for the field of Mechanical Engineering and Materials containing typical expert knowledge and skills. Description of the study programme also contained: education purpose and graduate profile, relation to national descriptors, relation of the programme to the field of education, specifics of the study programme, foundations and theoretical framework of the programme, methods of education and evaluation. Because all study programmes are divided into a greater number of study fields, the description

of learning outcomes of each study programme had to be rather general. It was acknowledged that the originally proposed title for the education field, Mechanical Engineering and Metallurgy, was limiting in its second part, as the construction of machines and equipment today increasingly often utilises non-metallic materials. Therefore, a change of title was proposed and accepted, and the field now bears the more fitting title of Mechanical Engineering and Materials.

- c) Pilot implementation experts filled out the received forms by adding learning outcomes (expert knowledge and skills) of the study field corresponding to the national descriptors, i.e. the minimum standard, and education descriptors for the field of Mechanical Engineering and Materials containing typical expert knowledge and skills. Descriptions of learning outcomes of the individual study fields were based on the learning outcomes of the appropriate study programme. A potential issue appeared in the need to assign a study field to just one subject area. For some fields and specialisations that education with an engineering focus is divided into, it is necessary to have substantial knowledge of other fields. For example, the construction of food processing machinery requires knowledge of food technology, but it is not necessary to include the corresponding study field in the Food Industry subject area in addition to Mechanical Engineering and Materials. At the same time, it should be clear to both employers and students how the programme will be structured and that they will gain the knowledge required.
- d) Based on the processed learning outcomes of individual fields and specialisations, Prof. Čada from the implementation team and all pilot implementation experts filled out the received forms by adding learning outcomes (expert knowledge and skills) for the course they teach in accordance with national descriptors, i.e. the minimum standard, and education descriptors for the field of Mechanical Engineering and Materials containing typical expert knowledge and skills, to ensure they will be systematically linked together and integrated in the structure of the study field and programme as a whole. For each course, there were 4 to 6 learning outcomes. In their formulation, action verbs were used (with the help of Bloom's taxonomy). Learning outcomes were formulated in a way that is comprehensible to students, employers and the public. In addition to the key element of the pilot project, i.e. the study of machine construction, selected courses of the common programme for bachelor students were also processed. This part of the work involved a larger number of guarantors of the individual courses; it was necessary to provide not only initial training but especially mutual cooperation. The greatest obstacle was that many of the persons involved did not understand the semantic difference between the terms education goal, graduate profile of a course and learning outcomes. Some academics approached their task of modifying the definitions of learning outcomes with hesitation, occasionally even with contempt and doubt that the activity was meaningful. For this reason, it is necessary to devote more time to the introduction of the system and the anticipated goals of the implementation; likewise, a wider group of course guarantors should be involved in the definition of learning outcomes of entire study fields and programmes.
- e) Meeting of the pilot implementation team to compare and make corrections to the processed learning outcomes, i.e. expert knowledge and skills of the 4 study programmes and 4 fields. Comparing and correcting processed learning outcomes, i.e. expert knowledge and skills of selected example courses. Preparation of a meeting of the pilot implementation team with guarantors of professional courses at the faculties.
- f) Meeting of the pilot implementation team with guarantors of the courses of the respective department, at each faculty separately, with a presentation of prepared examples of solutions



(explaining the issue and teaching the guarantors of professional courses how to process learning outcomes, i.e. expert knowledge and skills of individual courses). Given the number of specialisations and courses, it was agreed that the pilot implementation should only affect selected specialisations and in them, only compulsory and restricted elective courses. Guarantors of professional courses at the profile department were given a deadline for submitting processed learning outcomes, i.e. expert knowledge and skills of the courses they are guarantors of, for each faculty separately.

- g) Meeting of the pilot implementation team to compare and make corrections to the processed learning outcomes, i.e. expert knowledge and skills of the individual courses of the profile department. Comparing and correcting processed learning outcomes, i.e. expert knowledge and skills of selected example courses.
- h) Meeting of the pilot implementation team with guarantors of all fields of selected study programmes, both faculties together (21 guarantors from FS and 16 guarantors from FMMI), while also inviting all department heads interested in the project. The objective of the meeting was a presentation of the project and the new approach of MEYS to study programmes, study fields and courses with regard to the formulation of learning outcomes, i.e. expert knowledge and skills, presentation of the implementation of the National Qualifications Framework for Tertiary Education, introduction of the link between Q-RAM and the requirements of ECTS, presentation of work already done on the project – processed learning outcomes of the teaching of study programmes, selected study fields and courses at FS and FMMI of VŠB-TUO, discussion on processed learning outcomes, i.e. expert knowledge and skills of 4 study programmes, 4 fields and courses, verification of compliance with national descriptors (with possible correction).

### 3 Presentation of the Q-RAM project and the pilot implementation during its realisation

- The Q-RAM project was presented **at a meeting of the Scientific Boards of the faculties** (FS – 10 May 2011, FMMI – 9 June 2011) with participation of employer representatives.
- The Q-RAM project was presented **at a meeting of the Academic Senates of both faculties**.
- The Q-RAM project was presented **at the student graduation ceremony** of both faculties (FS – 29 September 2011).
- The Q-RAM project was presented **to employers** – when preparing parts of courses or entire courses in collaboration with companies.
- The Study Department was acquainted with the Q-RAM project.
- The implementation team of the project welcomed the creation of a **website** by the Q-RAM project management (with nation-wide accessibility), providing up-to-date information on the project (presentations, directory, instructions, examples, etc.) the team members could then refer to, for example, in discussions with course guarantors.

### 4 Proportion and number of courses in the programme/field described in the pilot implementation

Bachelor's study programme B2341 *Mechanical Engineering* – 43/50 in the common part of the



studies.

Selected study field *Construction of Machinery and Equipment*:

- *Production Machinery and Equipment* specialisation – 12/43,
- *Industrial Design* specialisation – 12/44,
- *Earthwork, Mining and Construction Machinery* specialisation – 14/43.

Follow-up Master's study programme N2301 *Mechanical Engineering*:

- *Production Machinery and Equipment* specialisation – 20/51,
- *Earthwork, Mining and Construction Machinery* specialisation – 24/67.

Bachelor's study programme *Material Engineering*, selected study field: *Engineering Materials* – 9/37.

Follow-up Master's study programme *Material Engineering*, selected study field: *Engineering Materials* – 11/21.

## 5 Motivation and experience from the pilot implementation at VŠB-TUO

The main motivation for VŠB-TUO's involvement in the pilot implementation was to get an idea of the requirements of the unified system and to be able to positively influence them.

The pilot implementation at VŠB-TUO involved 67 persons in total.

The VŠB-TUO had an advantage as a holder of the ECTS Label and Diploma Supplement Label certificates, as the structure of requirements for the descriptions of individual courses is based on the same methodology and terms such as knowledge, skills and competencies were already known to the individual course guarantors. Despite that, many asked for suitable model example solutions for specific courses to be used in their work in addition to general information and descriptors. They were primarily provided with finished course descriptions from the common part of the studies, as there were concerns they could follow these examples too closely or even copy identical outcomes from the provided documents.

In the *Construction of Machinery and Equipment* study field and similarly also in *Construction and Process Engineering*, there were problems with their assignment to a subject area. With their specialisations, these fields overlap with more subject areas, for example with Manufacturing (the *Production Machinery and Equipment* specialisation), Mining and Mineral Processing (the *Earthwork, Mining and Construction Machinery* specialisation) and Security Studies (the *Hunting, Sporting and Defensive Weapons and Ammunition*).

With regard to specific courses, there were some problems, for example, with the item titled "*Education objective and graduate profile of the course*". Guarantors of the individual courses considered the education objective to be virtually identical to the graduate profile. There was more confusion surrounding the relationship between the "*graduate profile*" and "*learning outcomes*," with course guarantors believing the terms to be identical. Objective of education defines the knowledge and



skills students should acquire in the given course (objectives are usually focused on the future). The graduate profile of a course summarises the knowledge and skills students acquire after passing the course. The formulations of learning outcomes and graduate profiles may be stylistically different, yet are almost identical in content. If there is to be any difference between education objectives and graduate profiles of a course, it should be explained in advance.

In the description of technical field courses, it should be emphasised that education must utilise technical methods and measurements, leading to ***higher demands on experimental and measuring equipment***. After implementation at schools, it would be helpful if the ***requirements for completion were abbreviated***. One thing not present in the Q-RAM table which should be adopted from current practice is the use of course plans, i.e. ***lists of topics for individual weeks of teaching***. The plan of the course clearly defines the subject matter being taught and gives fairly clear information to students as well as to employers and the accreditation commission.

In preparing sections “*How do the learning outcomes of the course contribute to achieving the learning outcomes of the entire study field*” and “*How do the learning outcomes of the course contribute to achieving the learning outcomes of the entire study programme*,” the descriptions of study programmes and fields could include learning outputs as individually numbered items which could be referenced in the description of courses.

Many authors (guarantors) of course descriptions found precise differentiation and understanding of the differences between knowledge and skills difficult. For example, in the document titled “*Recommendation for Teachers: How to Write Learning Outcomes for Study Fields and Courses*,” the list of characteristic words for expert knowledge includes the word “*analyse*”. Discussions with some guarantors showed that they consider the ability to analyse a certain state of affairs a skill rather than knowledge.

It follows that it is important for the guarantors of study programmes, fields and courses to have accurate information on “what to do”. That necessitates precise definitions of concepts, terminology and requirements as well as the creation of model solution examples.

All uncertainties and inaccuracies in objectives and work procedures lead to a situation in which the guarantors preparing the descriptions of fields, specialisations and courses approach their work with less diligence and some of them doubt the meaningfulness of such effort. For this reason, more time was required for persuasion and explanations as well as for informing about and fixing discrepancies in the course descriptions to ensure the result corresponds to the requirements of the pilot implementation. It is for example very time consuming to verify the continuity of courses within a field or specialisation.

In the implementation, it proved useful to organise regular meetings of the team and consultations of the draft learning outcomes of individual programmes and fields. At the same time, the Q-RAM project and its current outputs were presented to a wider professional audience and in particular to all heads of departments, including those not involved in the implementation, and all members of the FS Scientific Board. In particular representatives of industry among the members of the Board welcomed this information and also made several important suggestions for further work on the project.

The pilot implementation process was time-limited, meaning there was not enough room for more detailed explanations of the objectives and processes of the pilot implementation or discussion on these topics (in short: as much was done as the given time schedule and conditions allowed). If the qualifications framework were implemented at the entire university, much more time would be

required for presentations, explanations, processing, coordination and verification of the individual required outputs.

Most guarantors see the most important benefit of the project as the incentive to review the content of individual courses, verify their continuity, resolve overlaps and streamline the entire process. Nevertheless, these outputs were not the project's primary goals.

If learning outcomes are implemented across the board, the benefit will be in better orientation in the offer, progress and objectives of education in individual fields and specialisations for prospective and current students, parents and employers as well as an opportunity to compare individual programmes offered at various universities.



## 2.2.9 UNIVERSITY OF TECHNOLOGY IN BRNO, FACULTY OF ELECTRICAL ENGINEERING AND COMMUNICATION – ELECTRICAL ENGINEERING

Petr Fiedler, Stanislav Hanus, Petr Vavřín

At most technically oriented faculties, the implementation of the results of the Q-RAM project may also be very useful for innovating the content and form particularly of bachelor's programmes created as a consequence of the Bologna Declaration around 2000. These programmes had almost no tradition at Czech universities; professional education on the bachelor level was provided earlier at vocational and industrial schools. It is therefore understandable that bachelor study programmes designed without extensive experience or feedback from the industry, which still isn't sure on what level of technological processes bachelor graduates would be best employed, were not and are not optimally designed. The fundamental question being tackled by technical universities since roughly the middle of the previous century concerns the ratio between theoretical knowledge and practical skills. To put it simply: for a very long time, employers of our graduates have been divided into two groups. The first believes that the most important part of university education is theory, for which there is rarely enough time in professional life, while the other wants to hire graduates who will be able to start working immediately and accept a certain functional role in technical operations. The former outlook is no longer fully justified, as the development of an individual's qualification (which also means following the latest theoretical advances in the field) is a standard requirement at all modern technical facilities. The latter requirement is also not entirely feasible, since specialisation is so strong today that some time for training inexperienced graduates is always necessary. At FEKT VUT as well as at other technical universities in the Czech Republic, it would be unrealistic to create "sandwich programmes" in which studies include at least 6 months of practice. The current numbers of students make this approach impossible. The correct solution to the question above lies in a balanced combination of theory and practice.

It must be noted that thanks to the massive utilisation of computer technology (and in particular special software packages such as MATLAB, SIMULINK, etc.), some parts of theory may be skipped and replaced with new knowledge. In general, students can now spend less time memorising concrete values and data and concentrate more on methods, contexts and logical deduction. This shift applies not only to technical and natural sciences but also to humanities. The method of determining learning outcomes is a suitable tool for obtaining an overview and optimising the content of individual courses and the entire programme.

The pilot implementation of the outputs of the Q-RAM project at FEKT VUT Brno had the form of creating learning outputs on the level of one bachelor's and one follow-up master's study field. For the pilot implementation, a bachelor's and follow-up master's study field focused on cybernetics, automation, measurement systems, control and robotics was selected. The implementation team believes this field combines the knowledge and skills of many other specialised study fields of electrical technology and as such is suitable for the pilot run of the project, verifying the methodology on a wider range of specific areas of expertise.

Learning outcomes on the level of the study field and programme were defined using the methodology of national descriptors by a three-member team composed of the field's long-term guarantor and doyen and two Vice-Deans for studies. Learning outcomes on the level of courses were created for key profiling courses (particularly compulsory and optional) by their guarantors, in some cases with

the help of other teachers.

As supporting teaching methodology and psychological foundation for the formulation of learning outcomes, Bloom's taxonomy of action verbs was used, assigning appropriate verbs to the individual levels of expert knowledge.

The implementation team tried to minimise the time requirement for the guarantors of the individual courses. For this reason, a questionnaire form was used for the formulation of learning outcomes – each guarantor received a questionnaire and a table of action verbs, entering learning outcomes for the individual knowledge levels in the form of sentences.

An example of this type of sentence/learning outcome could be: *“The student is able to select the right type of diode and explain this choice.”* To make the completion of the questionnaire easier for the guarantors, it was provided in an electronic form and partially pre-filled, containing example learning outcomes from another course as instructions on how to write learning outcomes and with what level of abstraction.

The methodology for writing learning outcomes often recommends approximately 3-4 sentences for each. It turned out that the effort to remain brief leads to vague formulation of knowledge, contrary to the requirements of specificity and verifiability of the achieved learning outcomes. Similarly, it was determined that it is necessary to insist on the use of action verbs, as other types of verbs can lead to a formulation of learning outcomes that is not verifiable.

A statement of: *“The student is able to select the right type of diode and explain this choice”* can be verified for a specific student (Select a suitable diode and explain why you made this choice.) A vague statement of *“The student knows the basic application principles for diodes”* cannot be verified, as it is not unambiguously clear what are the *“basic application principles”* nor what precisely is meant by the word *“knows”* in this context. A statement that cannot be verified cannot be considered a well-formulated learning outcome on the course level.

It could be said that learning outcomes define the added value of an educational activity. To be able to define the added value, the initial state must be known. For this reason, it was determined in the pilot implementation that the methodology for learning outcomes will define not only the added value of the course, but also the expected initial knowledge or prerequisites. The formulation of prerequisites and added values through a unified learning outcome methodology makes it possible to perform consistency checks in the curriculum as a whole and to verify the extent to which prerequisites of first year courses correspond to the content of secondary school curricula and the knowledge of a typical secondary school graduate.

Analysis of a prerequisite defined using the vague and unverifiable statement *“The student has basic knowledge of secondary school level mathematics”* showed that some guarantors of first year courses have the wrong idea of the standard content of secondary school curricula and with it unrealistic expectations regarding the students' initial knowledge. The term *“basic knowledge of secondary school level mathematics”* turned out to mean mathematical concepts that are not normally taught at secondary schools and not included even in the higher difficulty level of the school-leaving examination (infinitesimal and matrix calculus).

The questionnaire defining for each course its general prerequisites, prerequisites regarding knowledge of certain branches of mathematics and the added value of the course allows the board acting as guarantor of the study field to carry out a review of the curriculum and the content of



individual courses. In the pilot implementation, it was shown that the form of a questionnaire and learning outcomes on the course level are practical and effective tools for improving the quality of education and managing innovation of curricula.

Experience from the Q-RAM project was applied at FEKT VUT Brno in the preparation of a faculty-wide project OP VK CZ.1.07/2.2.00/28.0193 *Complex Innovation of Study Programmes and Improving the Quality of Education at FEKT VUT Brno*. In this project, the methodology of learning outcomes will be used to review and innovate the content of five bachelor study fields and ten follow-up master study fields.

## 2.2.10 TERTIARY PROFESSIONAL SCHOOL, SECONDARY SCHOOL, CENTRE OF PROFESSIONAL TRAINING SEZIMOVO ÚSTÍ – ELECTRICAL ENGINEERING

František Kamlach

In the implementation of Q-RAM, the first step was a brief description of the current educational programme at the professional school followed by a discussion regarding its length and an effort to describe the educational programme using learning outcomes in accordance with the Q-RAM concept.

### 1 DESCRIPTION OF THE EDUCATION PROGRAMME

At the Tertiary Professional School, Secondary School and Centre of Professional Training Sezimovo Ústí, there is only one accredited field, **26-41-N Electrical Engineering**. This field has a single educational programme: **26-41-N/01 Electronic Engineering – Mechatronic Systems**. The accreditation was approved for school years 2007/2008 through 2011/2012. An application was submitted for its extension for another 3 years. This request has been granted. At the same time, the project titled “The System for Evaluating the Mechatronics Educational Programme at the Tertiary Professional School and its Permeability Towards Technical Tertiary Schools – CZ.1.07/2.1.00/13.0018” from 2010-2011 included the creation of an innovated educational programme **Electronic Engineering – Mechatronic Systems** with three specialisations (Mechatronics, Information and Control Technology, Automation in the Energy Industry).

The individual specialisations could be briefly described as follows: The Mechatronics specialisation is essentially a duplicate of the original educational programme approved for 2007/2008 to 2011/2012, with a few minor organisational and formal adjustments. The Information and Control Technology specialisation is more oriented towards the analysis of behaviour of real technology, the design and implementation of control algorithms for such systems and their actual programming. The Automation in the Energy Industry specialisation primarily focuses on electrical machines, the generation of electrical energy and the operation of power grid systems.

The objective of the educational programme is to prepare flexible graduates whose professionalism is at a level that enables them to master the field of mechatronic systems as a synergy of electronics, automation and engineering. The graduate is able to utilise the acquired competencies both in demanding technical jobs and in university studies.

#### 1.1 Characteristics of the education programme content

The content of the education programme is organised in modules. The header of a module contains its name, code and type (compulsory/restricted elective/optional), nominal length (total number of hours of lectures/seminars/homework, i.e. self-study, consultations etc.), validity, author and input conditions (knowledge) needed to pass. Each module also includes a description, **expected study results (knowledge of graduates of the module)**, module content, recommended teaching practices, form of module completion (credit/classification, credit/examination and credit value), evaluation of results (requirements to successfully pass the module) and recommended literature.

The modules typically follow the structure of lecture – homework – seminar – homework. The subject

matter is first explained at a lecture. The student becomes acquainted with it (learning the basic facts and skills) to prepare for seminars where the content is actively and thoroughly practised (developing and correcting the knowledge). In subsequent home study, the student solves more complex tasks (possibly in a team) to achieve greater skill and understand contexts.

## 1.2 Graduate profile – the Mechatronics specialisation

- The graduate designs machinery, equipment, elements and components of production and non-production systems.
- The graduate controls and maintains the operation of production and non-production systems.
- The graduate diagnoses operating conditions and faults of machines or equipment and proposes necessary corrective action.
- The graduate solves tasks in the fields of control and regulation.
- The graduate works with professional documentation, being able to write and present it.
- The graduate leads a working team of experts on various fields assembled to solve tasks in control and automation.
- The graduate is able to set up a small and medium-sized company as an independent entrepreneur.

## 2 LENGTH OF THE EDUCATION PROGRAMME

This description involved further discussions on whether it is possible to implement this technologically challenging educational programme in a short cycle (2 years). It was concluded that it was not possible, and that the programme must be designed for three years. The educational programme also requires practical training in which the student learns in a real business environment. To be meaningful, this training must take an entire semester. After returning from this training, the student must write and defend a thesis, for which more time is needed than just the next term (semester). If the educational programme were designed for a shorter cycle of two years, there would be less than one year remaining for actual education at the school. For an educational programme as demanding as 26-41-N/01 Electronic Engineering – Mechatronic Systems, this is clearly not sufficient. Removing practical training from the educational process, on the other hand, would defeat the purpose of tertiary professional education. Moreover, students themselves consider this part of their education highly useful, as it allows them to see for themselves how important the theoretical background provided at school is in practice and how it is applied in a real company, what it is like to work on a team, etc. Many companies also require previous practice when hiring new recruits. With this system, our students are provided with at least some experience, albeit short-term.

## 3 DESCRIPTION OF THE EDUCATIONAL PROGRAMME THROUGH LEARNING OUTCOMES – THE MECHATRONICS SPECIALISATION

### 3.1 Professional knowledge

- The graduate knows the basic electronic components and their schematic symbols and understands their function.
- The graduate knows the basic components used in engineering and their purpose.
- The graduate is familiar with sensors of various physical quantities and understands their parameters.
- The graduate is familiar with active components of various physical quantities and understands their parameters.
- The graduate knows the basic principles of automation and regulation.

### 3.2 Professional skills

- The graduate designs machinery, equipment, elements and components of production and non-production systems.
- The graduate controls and maintains the operation of production and non-production systems.
- The graduate diagnoses operating conditions and faults of machines or equipment and proposes necessary corrective action.
- The graduate solves tasks in the field of control.
- The graduate can work with and write professional documentation.

### 3.3 General Competencies

- The graduate presents the results of his or her work – documentation, presentation.
- The graduate leads a working team of experts on various fields assembled to solve tasks in control and automation.
- The graduate is able to set up a small and medium-sized company as an independent entrepreneur.

Comparing the learning outcomes above with the graduate profile of our educational programme (see Chapter 1.2), it can be seen that in professional skills and general competencies, the learning outcomes essentially duplicate the graduate profile. Only expert knowledge was formally added. Simply put, the profile of a graduate is basically synonymous with learning outcomes in our educational programme. Our educational programme was created by first formulating a graduate profile and only then developing the individual courses and their content. In this respect, it can be said that our educational programme fits the Q-RAM project framework; in fact, we were a little ahead.

The situation is similar with the learning outcomes of individual courses. Each module includes the expected results of study, which are essentially identical to learning outcomes of the courses in

Q-RAM terminology. For example in the Modelling and Controlling Systems module, the expected study results are as follows:

**After completing the module, the student can:**

- 1) simulate a model of a real dynamic system on a PC;
- 2) analyse the properties of a model through simulation;
- 3) identify unknown constants in a model;
- 4) verify the correctness of an identified model of a dynamic system;
- 5) design basic PID controllers;
- 6) simulate a control loop in a computer, analyse its properties;
- 7) apply a designed controlling element to a real dynamic (laboratory) system

#### 4 CONCLUSION

Creating learning outcomes for our educational programme wasn't particularly difficult. The programme had already been designed that way, only the terminology was different. It was more difficult to compare learning outcomes from our educational programme with the national descriptors. In essence, our learning outcomes correspond to national descriptors. On the other hand, we are a technical school and as such are used to accurate and unambiguous forms of expression, which is why this statement should be explored in depth. It is very difficult to determine, for example, the difference between "a specialised and detailed knowledge and understanding of the area of study..." (national descriptor of expert knowledge for a short cycle) and "a broad knowledge and understanding of the area of study" (national descriptor of expert knowledge for a bachelor cycle). We did not receive any methodology that would specifically explain the difference between "specialised and detailed..." and "broad...".

For this reason, some question marks still remain in the comparison with national descriptors, as national descriptors are formulated very generally and, according to the initial training on the pilot implementation, deliberately so. For technically oriented fields accustomed to precision and clarity of expression, this feels like playing with words. Nevertheless, it can be stated that the learning outcomes of our educational programme correspond to national descriptors.

**A recommendation at the end** – renew expert discussions and make the general definitions of national descriptors more specific, particularly in the differences between individual cycles, and find the answer to some questions, e.g. whether learning outcomes of an educational programme correspond to the graduate profile.

## 2.2.11 CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE, FACULTY OF AGROBIOLOGY, FOOD AND NATURAL RESOURCES – AGRICULTURE

Radko Rajmon

### MOTIVATIONS, EXPERIENCES, LESSONS

The Faculty of Agrobiological Sciences, Food and Natural Resources of the Czech University of Life Sciences Prague (FAPPZ) has undergone many fundamental changes in the last 15 years reflecting the developing situation in tertiary education (the transition to a three-stage system, increase in the number of students), the practice of agriculture (narrower and deeper specialisation of the individual professions, alternative approaches to production, taking into account the non-productive functions of agriculture) and social demand for various professions (growing preference for animal welfare, ornamental horticulture). Many new fields were gradually introduced, intensifying the utilisation of the school's capacities. The university is trying to obtain the ECTS Label certificate; a single record-keeping system for information on courses was introduced, study demands are reflected in the credit system, learning outcomes were designed for the individual study programmes, fields and courses. All that was implemented “on the fly” against the backdrop of dramatic development in information technologies. Yet, this focus on form has not always been reflected in content, particularly when formulating learning outcomes.

The rapid development, introduction of a three-stage educational system without real internal need, the search for a common point of view with the accreditation and certification authorities, trends often presented to universities in a jargon that was frequently unintelligible and even abhorrent all raises a number of conceptual questions and the need for conceptual practices derived from nation-wide solutions as well as a careful approach to attempts at providing such solutions. The management of the faculty gave considerable attention to the Q-RAM project from the very start.

In the first stage of the project, the “Agriculture, forestry, food industry and veterinary medicine” section of the Q-RAM project involved Prof. Tlustoš and doc. Rajmon on behalf of FAPPZ. The knowledge and experience gained in the processing of national descriptors and subject areas and in the transfer of some elements into the life of the faculty led its management to an active interest in participating in the pilot implementation of the qualifications framework at FAPPZ with the intention of keeping up with the project, ensuring that the faculty is informed about proposed changes, reflecting its experience and perspective in the methodology being prepared and clarifying as well as learning the methodological approaches in a model situation. It was clear that for the work with the qualifications framework and learning outcomes, a high quality, unambiguous methodology will be required, yet hard to formulate and acquire. One of the reasons is that the language of the national descriptors is not easy to transfer to the lower levels of the system. Another is the constantly evolving perspective on what is the optimal method for addressing the continuity and permeability of bachelor and master programmes (conflicts between the preference of less theoretically demanding and more practically oriented expert bachelor studies and the liberal approach of faculties offering similar fields of study to the admission procedure, the possibility of reviewing the conceptual design of study programmes with inspiration from the Agriculture subject area).

The objective of the pilot implementation was to process typical consecutive study fields in the

Agriculture subject area to the level of learning outcomes of individual courses. Another aim was to initiate wider professional discussion of the documents already created in the Agriculture subject area and present the qualifications framework and related issues to the faculty's teaching staff. With regard to the current needs of the faculty and the different structure of doctoral study programmes compared to the preceding study levels, two study fields were selected for the implementation: the practically oriented bachelor field titled Animal Production and a follow-up master's field of the same name, both included in the Animal Breeding bachelor and master study programme. These fields provide traditional education in animal husbandry. This means the professional profile of graduates is relatively stable, which makes it possible to concentrate on the issues of the implementation of the qualifications framework itself. At the time of the pilot implementation, there were about 320 students in both fields, and approximately 67 courses were taught.

The pilot implementation at FAPPZ was in the hands of the expert team of the faculty coordinated with the leaders of the Q-RAM project. This team was composed of prof. Ing. Pavel Tlustoš, CSc. (Dean of the Faculty), **doc. Ing. Václav Hejnák, Ph.D.**, and prof. Ing. Iva Langrová, CSc. (Vice-Deans for Education) and as the team's implementation expert, doc. MVDr. Radko Rajmon, Ph.D. As guarantors of the individual study programmes, fields and courses, there were about 50 more teachers actively involved in the pilot implementation. Information on the project was also shared with the remaining members of the faculty management, the scientific board, academic senate and chairmen of the professional boards of doctoral study programmes (DSP), naturally together with the management of the university. This communication was simplified by the fact that the persons listed above are linked to all of the mentioned interest groups. The discussions also involved students (DSP), graduates of animal husbandry fields. Representatives of employers and professional associations were not invited, which in retrospect can be considered a missed opportunity and a chance for the future.

The basic discussion took place during the initial meeting with guarantors of all study programmes, and later at the Dean's Collegium and meetings of the Academic Senate. As these topics weren't new, it was not a discussion on whether it should be done, but rather a summary of possible objectives and goals and in particular an explanation of possible methodological approaches. On the level of guarantors of individual courses, the debate mostly had the form of individual consultations over the documents being revised according to the instructions in a provided letter. The project didn't elicit great interest from the students – its form doesn't mean a great change compared to the current state and the information wasn't seen as conflicting. Any benefits in content the project brings are yet to be seen.

The attitude of the individual stakeholders in the discussions ranged from “a pointless formality” to “a potentially useful tool for increasing the quality of teaching”. Many people appreciated that with the specified methodology, the system of course documentation becomes more logical. It was very positive to see that even the most sceptical colleagues approached their partial tasks responsibly and that the greatest obstacle wasn't a lack of interest in the quality of teaching, but rather concerns of formalism, mostly based on previous experience and different interpretations of concepts and definitions. In general, people whose approach was initially careful or slightly negative were more open to discussion and arguments, and their perception of the matter often improved over time. Those who were negative towards the project from the start fulfilled their part of the task, but it was hard to explain to them e.g. the importance of certain categories or formulations and with it, achieving adequate results.

The situation was strongly influenced by the support for the project from faculty management as well as the fact that the pilot implementation of the qualifications framework de facto meant finishing or reviewing already existing documents, both in terms of a certain level of knowledge of the issues and



a positive approach to the shift towards a less formalistic concept, as well as in terms of less interest in something that does not represent a major change compared to the current formally perceived status quo. Since their creation, the existence of learning outcomes has not had any significant impact on the lives of teachers or students. On the one hand, this meant the ideas weren't quite new, but on the other, made it more difficult to explain the change compared to the previous state. It was necessary to adequately explain the purpose of the whole project, emphasising the aspects directly related to the operation of the faculty, accreditations, specification of the individual fields/courses and their mutual links. It was apparent that the earlier effort to quickly create learning outcomes based on fragmentary information and without a comprehensive methodology only served to complicate matters.

The most often heard reservations, mostly related to how the qualifications framework will be applied by the management in the future, could be summarised as doubts whether the accomplishment of defined outcomes is objectively measurable, particularly on the national level or in the individual subject areas, and concerns whether the project will not allow formal cover-ups that could in the context of the new Tertiary Education Act create an avenue for corruption in the process of school accreditation.

In the implementation of the qualifications framework at the faculty, the main problem turned out to be a lack of familiarity with core terms such as graduate profile and employability, course characteristics, teaching objectives, forms of education, knowledge, skills or capabilities, and their confusion. A common mistake was trying to describe general competencies gained in individual courses in absolute terms (every single examination is passed by independent and creative geniuses with perfect language skills), while on the other hand the authors often failed to clarify through which forms of education the course wishes to contribute to such competencies even to a small degree. Sometimes, there was a clear reluctance to define outcomes, particularly regarding skills, in an unambiguous way (statements such as “student may acquire the ability to do...”). This confirmed the general assumption that the weak points of the current state of education are to be found in the support of skills and general competencies in particular. At the same time, it seems that the key to success of a blanket deployment of the qualifications framework in practice will be the comprehensibility of methodological recommendations and maximum possible unification of terminology. In this regard, one cannot have too much communication, which is very time-consuming. Even though the main stakeholders were orally informed in advance and the prevailing approach was friendly and open, it turned out that the selected written form of the methodological instructions for processing course documentation is insufficient – while the attitude of individual course guarantors became noticeably more positive, most courses still required individual communication. Brief group training of course guarantors using model examples could probably save some of the time for these individual consultations. Feedback on processed materials, however, remains indispensable. At FAPPZ, we were only processing one bachelor and one follow-up master's field, which made overcoming these obstacles relatively easy. When a greater number of fields, particularly those with less tradition or generating more controversy, have to be prepared at once, however, much greater complications must be expected. A key factor will therefore lie in the thorough training of the persons who will be implementing the qualifications framework at the institution, in a number proportional to the intended scope and schedule. They will have to receive methodological assistance, particularly in processing the first fields. Such coordinators should be people who have good knowledge of the system of study programmes and fields as well as the expert subject matter, with a talent for language and stylistics and naturally also with the prerequisites for methodological work. There is still an open question regarding the extent to which the time requirement of such activities remains compatible with the performance of other academic functions.

Regarding our preferences for creating the documentation for individual levels of the qualifications



framework, our experience suggests that while the definition of individual fields should probably be written for a greater number of related fields in parallel to achieve better profiling for each of them; with courses it might be advisable to approach the individual sequentially linked fields in turn, to fix any problems with the documentation of the courses and retrospectively evaluate them in the context of the entire field – at least in the situation in which teaching is provided by multiple departments and the transfer of responsibility for the implementation of individual fields to the level of guarantor departments remains problematic.

The pilot implementation of the qualifications framework at FAPPZ clarified many uncertainties, sometimes evoking the need to review certain facts, sometimes providing new arguments in favour of solutions that had already been implemented. The first description of a subject area to be commented on was Agriculture. The documentation of implemented fields was then extended with a description inspired by the state of documents related to the Agriculture subject area. The learning outcomes of such fields were then redefined. The combination of a basic field profile with a tabular overview of learning outcomes proved a useful form of field documentation. The structured description of the field was also a good starting point for the processing of the actual learning outcomes. On the level of individual courses, it was usually necessary to perform a thorough review of the current, often heterogeneous format of learning outcomes. In many cases, there was a shift from general proclamations to the formulation of specific knowledge and skills, which in turn helped clarify the priorities of education and often also adjust other parts of the documentation, particularly in the forms of education. An important moment in the final stage was also a retrospective review of the compatibility and continuity of individual courses in the context of the entire field. Attempts to define individual general competencies as outcomes on the course level proved unsuccessful, as this method leads to formalism. An alternative approach consisting of a definition of appropriate supporting forms of teaching made the documentation of courses much more credible.

Knowing the approach of other faculties to the pilot implementation and having gained experience from new situations in our own department, I would also recommend one more element – in addition to the definition of learning outcomes of a course, also define the inputs. The traditionally used system of providing a list of prerequisite disciplines is becoming untenable. In the three-stage system of studies, and with a broad offer of restricted elective and optional courses, it is difficult to define a correct sequence for all relevant disciplines and corresponding examinations. Moreover, having passed an examination in the past does not necessarily guarantee that the student still has the knowledge the course should build on.

Regarding the perspectives for applying the new system, the qualifications framework brings more logic and structure to the rather forcibly implemented system of three-level tertiary education and the poorly controlled surge in the numbers of colleges, faculties and entire universities. Whether this system will lead to the elimination of low-quality schools is something that doesn't depend so much on the framework as on those who will be using it. This, however, raises questions in its application to borderline fields. On the faculty level, there will be a new tool for making the organisation of fields and courses more efficient, which can also:

- more easily uncover gaps e.g. in the connection of individual courses and coherence of the field;
- clearly define the differences between the bachelor and master levels in the field;
- contribute to the clarification of priorities and consistency of the objectives and forms of teaching, with a realistically expected result;

- become a platform for communication with partners in the processes of improving or declaring quality of education (accreditation and certification authorities, participants in the learning process – students, teachers, graduates, their employers).

For the success of future implementation of the qualifications framework, it is also important to not underestimate the preparation of the project from the side of managers. What is necessary is a good information system, particularly in terms of clarity, reliability and the ability to facilitate communication between the coordinators and those who will be processing the individual documents directly in the system; most importantly, however, a blanket implementation of the qualifications framework in all courses and fields must be planned adequately in advance – not in terms of months, but years.

What must be provided centrally? In the past, we already emphasised three aspects:

- unambiguous methodology, as brief and clear as possible, possibly also with example documentation;
- financial support/motivation;
- stable conditions for the work, at least in the mid-term horizon.

Today, in retrospect, I think the first of them is fairly well covered by the published output of the Q-RAM project, in particular the document titled “Recommendation for Teachers”. The second item could compensate the enthusiasm of our university teachers. But I would personally very much like to stress the last point.

## 2.2.12 UNIVERSITY OF SOUTH BOHEMIA IN ČESKÉ BUDĚJOVICE, FACULTY OF HEALTH AND SOCIAL STUDIES – HEALTHCARE STUDIES

Ivana Chloubová

In the pilot implementation of the National Qualifications Framework for Tertiary Education created in the Q-RAM project, the University of South Bohemia in České Budějovice was also asked for cooperation. Since it was chosen for the group of medical disciplines, the University of South Bohemia in České Budějovice selected the Faculty of Health and Social Studies for the project. The implementation group of the Faculty of Health and Social Studies of the University of South Bohemia in České Budějovice were the Dean of ZSF JU Prof. PhDr. Valérie Tóthová, Ph.D., Mgr. Ivana Chloubová, Vice-Dean for Study and Social Affairs, and PhDr. Marie Trešlová, Ph.D., teacher at the Department of Nursing and Midwifery.

The Faculty of Health and Social Studies of the University of South Bohemia in České Budějovice is training qualified healthcare professionals who, in accordance with Act 96/2004 Coll. (on conditions for the acquisition and recognition of qualifications for performing non-physician medical professions and activities related to providing healthcare), may work without supervision. The accredited study fields are the following: General Nurse, Midwife, Paramedic, Medical Laboratory Technician, Physiotherapist, Dietician, Radiology Assistant and Specialist in Public Health Protection.

According to the Q-RAM methodology experts, the study field chosen for the description should be one that involves multiple stages of studies (bachelor's, follow-up master's, possibly also doctorate). Already at the initial meeting with members of the team of Q-RAM methodology advisers in Brno, our working team suggested the Nursing study programme, the General Nurse bachelor study field, the follow-up study field Nursing in Selected Clinical Disciplines and the Nursing doctoral study programme as the most suitable choices. These selected study fields of a single study programme ensure continuity in the education of nurses (involving all the individual levels of the qualification and postgraduate education).

The reasons for participation in the project were administrative, as the University of South Bohemia is currently trying to obtain the DS Label and ECTS Label certification for which the formulation of learning outcomes of all courses of the study field is one of the main conditions; according to the current accreditation decree, it is now also required to formulate learning outcomes for new accreditation documents of new study fields/programmes or for a re-accreditation of current study fields. Involvement in the project was also beneficial from the teaching perspective as an effort to present an overview of resulting knowledge, skills and attitudes in the study field as well as the gradation of this knowledge, skills and attitudes at higher levels of education – in the follow-up master's fields and later also the doctoral programme. This method was supposed to confirm a suitable strategy for nurse education with an increasing gradation of knowledge and skills while maintaining continuity of this educational process.

Output knowledge and skills of general nurses are formulated in the basic competency criteria in the appropriate documents of the European Commission and Act 96/2004 Coll.

Fulfilling the objectives of the General Nurse bachelor study field leads to obtaining professional qualifications as a medical worker licensed to perform a non-physician profession without supervision. The objectives of the study programme are related to the development of the profession in

accordance with the European WHO strategy for the education of general nurses. The teachers strive to achieve the maximum possible quality of the training of qualified nurses, unify the teaching processes and link learning outcomes to teaching methodology and the methods of evaluating achieved results.

In the formulation of output competencies of the General Nurse study field, we arrive at definitions stating that a graduate of the General Nurse bachelor study field is able to:

- introduce and implement care that will improve the health and prevent diseases of individuals, families, groups and communities;
- apply the methodology of the nursing process in providing healthcare;
- take over the responsibility for independent provisioning of healthcare;
- inform and educate clients/patients.

In the creation of learning outcomes, we first tried to describe outputs within the field and continued with the creation of outputs on the level of individual courses. Before the actual processing, we assembled a sub-group consisting of representatives of the taught courses divided according to their thematic content and focus (ethics and philosophy, clinical and pre-clinical courses, nursing courses, psychology). This group of about 10 people acted as a coordinating and complementation team for the creation of learning outcomes on the level of individual courses. The main task of the group was to guarantee the quality of content of the outputs at the course level.

The formulation of learning outcomes involved almost all teachers who teach the courses (lectures and seminars); in cooperation with them, we tried to find the most concise formulations for the outputs. We were constantly trying to ensure that the outputs of individual courses capture both knowledge and skills as well as the attitude aspect. In the initial stage of defining learning outcomes, our primary problem was balancing the ratio between defined knowledge and skills. With the focus of the courses, for the large part oriented towards medical content leading to the acquisition of professional and practical abilities, skills tended to be represented in the outcomes more often. On the other hand, with courses of a purely theoretical nature in which the definition of required knowledge wasn't a problem, we struggle to find skills to describe. We analysed the syllabi of the individual courses (according to the accreditation materials) and worked not only with the content and focus of the course, but also the real opportunities of students and teachers to accept (or be able to provide), understand and be capable of using the provided knowledge and skills.

The work group also included the Deputy for Nursing Care of the České Budějovice Hospital, coordinating the formulation of outputs in the professional practice course (which is mostly being taught at the hospital). The Deputy of Nursing Care told us the activity was for her personally very rewarding, as it led her to clarify and consolidate the activities (skills) students should acquire during this professional training. Furthermore, this experience will also help her when instructing the mentors of professional practice in clinics, as with specifically defined outcomes, she can provide identical instructions for effective management of the practice of ZSF JU students. This ensures the professional practice is beneficial for both sides.

In the creation of learning outcomes, we regularly collaborated with the methodological advisers of the Q-RAM project, doc. PhDr. Darja Jarošová, Ph.D., and Mgr. Petr Pabian, Th.D., who have been a great help. Their valuable advice directed us towards a clear and specific goal.



In the processing of learning outcomes, we encountered constant doubts about whether the formulations were not either too broad or too specific. In defining very general terms, we felt that we were moving away from the course itself; on the other hand, when we were formulating highly specific details, we felt that we were not covering the entire breadth of the course. This also resulted in a discrepancy in the number of outcomes. Using more general formulations, we created “too few outputs”; being specific, we wrote a very high number of outputs and still felt that “there still is some knowledge or skill we didn’t capture”.

We were also constantly making sure that our learning outcomes are realistically achievable and measurable, to be able to verify later in our teaching practice whether a student possesses the given knowledge or skill. We imagined model situations in teaching and asked ourselves how to verify the knowledge and skills of a student in a specific course.

It was very beneficial for us to see the gradation of knowledge and skills (and in the very beginning, also to become aware of the gradation and its existence) in specific courses which begin in the bachelor study field and continue into the follow-up master field. We recognised that some knowledge and skills acquired in bachelor studies are essentially a prerequisite for the study of the course in the follow-up programme. This means it was not necessary to define outcomes which are already assumed at a basic level, but merely to raise their difficulty. We realised that mastering the knowledge and skills of the lower level of study should be taken into account or defined in some way. It was therefore necessary to perform a global review of the syllabi of all courses and define expected knowledge and skills from the individual education levels to ensure there is a clear increase in content – gradation – in the next level.

The actual definitions of learning outcomes were “something of a game with verbs” involving the search for the most appropriate ones.

Here are some examples for illustration:

### **The nursing process and human needs**

The student describes the nursing process in its various stages.

The student defines the concept of human needs, classifies the basic needs of clients/patients.

In a model situation, the student uses a method of the nursing process in accordance with the patient’s current state.

In a model situation, the student demonstrates the process of obtaining basic information on the bio-psycho-social and spiritual needs of a human being.

The student applies his or her knowledge and skills in writing the case history of a healthy and ill adult, child and senior citizen.

### **Latin 1**

The student describes the basic grammatical categories of Latin.

The student has the correct Latin pronunciation.



The student can use a Latin-Czech dictionary, uses the vocabulary and grammar of Latin nouns of all five declensions and adjectives of the 1st and 2nd declension.

The student distinguishes between substantive-adjective and non-agreeing substantive-substantive constructions and can use them correctly.

## **Latin 2**

The student can explain and use basic medical terminology in terms of both vocabulary and grammar.

The student uses basic Latin nouns of all declensions in combinations with other nouns, adjectives and prepositions.

The student uses basic Latin adverbs and numerals.

The student characterises verb categories which influence the creation of professional terminology.

With a dictionary, the student can understand a diagnosis in Latin.



## 2.2.13 COLLEGE AND HIGH SCHOOL OF HEALTHCARE ZLÍN – HEALTHCARE STUDIES

Andrea Bílková

### THE SCHOOL'S INVOLVEMENT IN THE PROJECT

The College and High School of Healthcare Zlín joined the project of a pilot implementation of the qualifications framework in January 2011 for several reasons. We were interested in active participation in the preparation of the reform of tertiary education and wanted to be at the source of current information as well as to acquire new contacts; we wanted to emphasise the importance of healthcare fields in the segment of medical colleges and, last but not least, also wanted to innovate and improve the current study fields at our tertiary vocational school and prepare them for an accreditation under new conditions in the future.

### INVOLVED PERSONS AND THEIR NUMBER

On behalf of the school, 22 people in total were involved in the pilot implementation, of which 5 people worked in the implementation expert team and the remaining 17 were the school's teachers. Students were not involved in the project, and a representative of employers only joined when the project was already underway. For the entire duration of the project, the expert team of the implementation consisted of 3 persons (a representative of school management, representative of the teachers of the selected field, a cooperating teacher). Two members of the expert team were replaced during the project due to staff changes at the school and for time reasons; the group of 17 involved teachers remained unchanged through the year.

Specifically, the initial expert implementation team consisted of PhDr. Marie Zvoníčková (director of the school), Mgr. Andrea Bílková (leading teacher of practical education and teacher of the Certified Paramedic field) and Mgr. Marta Maláníková (cooperating teacher); after the changes, the team members were Mgr. Andrea Bílková (leading teacher of practical education and teacher of the Qualified Paramedic field), Mgr. Anna Salvetová (cooperating teacher) and Bc. Radana Uhýřková (Head Nurse at the Emergency Medical Service of the Zlín Region – Vsetín District and external teacher of the Certified Paramedic field).

The management of the school supported its participation in the project despite the difficulties caused by a change in the position of the school director, provided adequate help and continuously collaborated with the expert team. The relationship between the implementation expert team and the school teachers involved in the project was also one of cooperation.

#### Previous experience

Before the start of the implementation, our school had no experience with qualifications frameworks or learning outcomes. Awareness of the Q-RAM project among the involved members of the expert

team was only fragmentary and mostly limited to knowing about the project's existence and its primary objectives. Also for these reasons, the involved people were initially sceptical when the project started at the school; over time and through their work on the project, this attitude eventually changed to understanding, interest and cooperation.

## SELECTION OF THE FIELD FOR PROCESSING

At the beginning of our work on the pilot implementation, the implementation expert team had to choose which of the current fields taught at VOŠZ will be selected for further processing. We could select between the two study fields currently offered and taught at our medical tertiary vocational school – Certified General Nurse and Certified Paramedic. Because the Faculty of Health and Social Studies of the University of South Bohemia in České Budějovice was working on the General Nurse field, we chose the Certified Paramedic field at our school. We had two main reasons for this choice: the first was that we didn't want to duplicate work in the same field, the other the fact that our school has greater experience with the Certified Paramedic field, as it has been taught since 1997.

## FORMS OF WORK

The work of all 22 people involved in the project took on various forms throughout the year.

We organised repeated seminars with the guarantor of the field and expert of the implementation team, workshops of the implementation expert team and seminars with involved teachers in which we primarily concentrated on presenting the goals and importance of the project. The other forms of work were personal consultations of members of the expert team with the involved teachers where the individual courses were discussed, as requested by the teachers, as well as an ongoing debate with the people involved and the organisation of a professional conference after 6 months of work on the project.

This professional conference organised by the school saw the participation of the guarantor of the field, expert of the implementation team, representative of the Ministry of Education, Youth and Sports, the implementation expert team, school management and the involved teachers. At the conference, active learning outcomes of the already processed courses were presented including the respective graduate profiles, and there was a discussion on the possibilities of further processing, adjustments and additions to the documents already created. The joint discussion about the presented partial outcomes was very effective and welcomed by everyone involved. The conference was a success and was considered very fruitful by the participants.

In October 2011, at the end of the pilot implementation, the expert team joined the final conference of the Q-RAM project in Olomouc; in November, members of the team took part in the professional conference at the Faculty of Health and Social Studies of the University of South Bohemia in České Budějovice, where they presented the method of our school's involvement in the project, including the results of our work.

## PROBLEMS IN THE PROCESSING





As our school had no prior experience with qualifications frameworks or learning outcomes before entering the project, our work had nothing to draw on. For this reason, we started from scratch. Also for this reason, we encountered many problems throughout the process.

The first of them started appearing when we tried to understand the concept of the qualifications framework and its components as well as the category of learning outcomes and the terminology which we found incomprehensible and inconsistent.

In the creation of descriptions and learning outcomes on the level of the programme and field, we encountered two problems. The first was in the detailed differentiation between the resulting knowledge and skills and their correct formulation. The second was caused by our incorrect understanding of the concept of “capability,” which meant we found it difficult to distinguish from knowledge and skills and also formulated it incorrectly.

The creation of descriptions and learning outcomes on the level of courses and other relatively self-contained parts of the study programme turned out to be particularly difficult. Our greatest problem was the creation of excessively long lists of knowledge and skill outcomes in the individual courses. Another issue was the concept of some courses – some of them corresponded to the requirements for outcomes of the short cycle, while in others (represented in greater numbers), the concept corresponded to the requirements of outputs for the bachelor cycle. In this situation, it became very difficult to differentiate between the knowledge and skills students should acquire at the given levels in these courses.

Another problem we encountered was that the outcomes of courses directly linked to subsequent practical courses (nursing practice, professional practice, etc.) were very difficult to verify. And last but not least, there were problems in differentiating between knowledge and skills of students in courses that continue into the next year. In such courses following up from one another, it is desirable to show a clear and unambiguous difference between the knowledge and skills of students in the 1st, 2nd and 3rd year, which we initially failed to achieve.

We also found it difficult to process courses the teaching of which involves not only professional teachers, but also external lecturers – physicians, nurses and paramedics. For time, work and organisational reasons, not all external teachers could be actively involved in the project, and the outcomes from their parts of the courses had to be written by professional teachers. This doubled their workload and made their personal time management more difficult.

The last area in which we encountered problems was the organisation of the pilot implementation. In our work, we had to cope with a change in the position of the school director as well as changes in the expert implementation team. We had to introduce the new members of the team into the project and teach them everything necessary, increasing the time and organisational demands on the remaining members. The change in school management led to a different internal situation in the school, leaving us less time to carry out some assigned tasks.

Despite those difficulties, everyone involved tried to deal with the problems as best they could and fulfil their assigned tasks. This was greatly helped not only by the methods of work listed above, but also the creative working atmosphere in the implementation expert team.

## RESULTS



During the pilot implementation at our school, we prepared descriptors for the Certified Paramedic study field, 30 courses in the field and a graduate profile. The list of processed courses includes those from the field of social sciences (English, German, Latin, ethics, sociology, psychology, etc.), professional courses (rescue service and the medicine of disasters, nursing procedures in standard and emergency care, nursing in clinical fields, etc.) and professional practice (professional practice during the teaching week, provided in blocks and over holidays). Not all courses can be listed here, but if we were to express the total volume of finished work, we processed about 90 % of the courses of the entire study field of Certified Paramedic.

## BENEFITS OF THE PILOT IMPLEMENTATION

The expectations we had when joining the project were fulfilled and in many ways surpassed. First of all, we managed to review the current Certified Paramedic field at our school and could realise a number of important things.

In particular, we understood the importance and need to precisely and consistently link together the individual courses. We also reviewed the time allocations for the individual courses, determining whether they were adequate, inadequate or excessive, and thought about ways to adjust them and make them more efficient in terms of the content and outcomes of individual courses. By studying and comparing the individual courses, we uncovered some duplication in the teaching content of some courses and removed it, improving the quality of teaching. We also thought about the possibilities of improving the efficiency and quality of education by changing or modifying the used teaching methods, also reviewing the means of student evaluation by the teachers. In some evaluation methods, we found for example that in certain courses, the established methodology does not correspond to the outcomes of the course, and adjusted it accordingly. The more we worked on the individual courses and fields, the more it became apparent that the individual elements must all be linked together; the information started forming a consistent whole.

For this reason, we believe that our observations and changes could improve the work of our teachers and make it more efficient and, in turn, improve the quality of the teaching as well as of the graduates of the Certified Paramedic field.

## INTRODUCTION OF THE QUALIFICATIONS FRAMEWORK AT THE SCHOOL

If we were to introduce the qualifications framework at our school in both fields it offers (Certified General Nurse and Certified Paramedic), our time estimate for processing the necessary documents would be at least 2 years per field.

Introduction of the qualifications framework in practice could be helped by greater media coverage of the project, better background in information and communications technology for involved teachers and better financial remuneration of the work of everyone involved. The introduction of the qualifications framework could also be helped by the organisation of regular expert seminars and workshops for involved teachers, led by expert guarantors, and potentially also the active involvement of external teachers or students. A very welcome aid would be a manual for work on the study programmes and fields, including demonstrations and examples with an explanatory commentary.



## OVERALL BENEFIT OF THE QUALIFICATIONS FRAMEWORK

We see the main benefit of the qualifications framework in the introduction of clear and transparent rules for tertiary education, better understanding of learning outcome requirements by the teachers, saving time spent organising the teaching and giving more room to the development of the actual educational content. We see further benefits in the possibility of guaranteeing the same requirements for quality and quantity of teaching of the same study programmes at different schools, and their better comparability.

## CONCLUSION

We are glad that our school could actively participate in the pilot implementation project of the National Qualifications Framework for Tertiary Education and hope that our experience will help everyone working on adjusting their study programmes and fields in the future.



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