



## **Methodological approaches to test the EQF descriptors on qualifications and curricula: Experiences drawn from LdV pilot projects<sup>1</sup>**

Dr. Irene Psifidou<sup>2</sup>,

Project manager, Cedefop

### **Introduction**

The enhanced goals of the EQF imply in particular a learning paradigm that focuses on the achievement of learning outcomes and the development of knowledge, skills and competences, irrespectively of where, when and how (European Commission/Parliament, 2008). Learning outcomes are best understood as a collection of useful processes and tools that can be applied in diverse ways in different policy, teaching and learning settings. It follows that there is no single correct or apt way of approaching them. The term can have a range of connotations and denotations, precisely because it is used in different contexts. The evidence contained in a new Cedefop study (2010) strongly suggests the need to be sensitive to the particular context in which learning outcomes are brought into use. Notably, learning outcomes are also required to perform multiple functions in national education and training systems in European countries: recognition of prior learning, award of credit, quality, learning plans, key competences as well as modernising the governance of education and training as systems are reformed to encompass lifelong learning (Cedefop, 2009).

---

<sup>1</sup> Paper presented in the 3<sup>rd</sup> LdV Workshop on Testing the EQF: Building Synergies and Common understandings organised by Cedefop in 15-16 December 2010, in Thessaloniki, Greece. <http://www.cedefop.europa.eu/EN/events/17341.aspx>

<sup>2</sup> The author is working on the development of education and training policy at European scale. She has worked in the U.S.A at the World Bank H.Q developing secondary education policy for transitional countries. Later, she joined the European Commission working at Cedefop, the Thessaloniki-based European Agency for the development of Vocational Education and Training in Europe where she manages European research projects, she is member of advisory groups set up by the European Commission to form education and training policies and to implement the European Qualifications Framework (EQF) working closely with stakeholders and social partners at sectoral, national and European levels.

Although the concept of learning outcomes is not a new aspect in the teaching and learning context (and especially for VET), the current focus on transversal key competences and holistic learning outcomes is discussed as a “shift of paradigm” underpinning a different mental model of valuing outcomes for all those involved in education and training. As a consequence of this new learning paradigm, learning outcomes have a pivotal position in redefining qualifications and VET, general and higher education curricula and learning programmes, and yet this happens at varying speeds as national developments are in different stages of progress (Cedefop, 2010).

Additionally to this core approach underpinning the EQF, learning theories and social and cultural values shape the definition of the distinctive features of qualifications and curricula; as knowledge, skills and competences are differently understood in each country and education and training subsystem, the learning outcomes approach varies accordingly. Increasingly, outcome approaches to qualifications and curricula seem to be more aligned to constructivist learning theories according to which the learner must play an active role in the construction of meaningful relationships between cognitive, functional, emotional and social skills to be competent in a particular situation (Cedefop, 2010). Past experiences have shown that too detailed and narrowly defined learning outcomes oriented solely on functional performance have imposed limitations to the learning process (Psifidou, 2009).

Finally, the legal framework endorsing the education and training system in each country, influences the design and value of qualifications as the law defines rights, duties, and the possibilities educational institutions have in these contexts (Cedefop 2010). On top of all these regulations, we find internal institutional regulations and guidelines. And finally within these institutions, there are commissions or committees that, at the end of the day, do the actual work of designing a qualification profile and learning programme. Evidence shows that an outcome-oriented approach has important implications at all stages of developing official documents which describe and certify qualifications, requiring stronger and broader involvement of the different stakeholders concerned (Psifidou, 2010a).

These different factors influencing the definition and development of qualifications and curricula raise many challenges to policy-makers and practitioners. Traditional processes on the design of qualifications (specification of knowledge and skills the students need to learn) is not sufficient anymore to meet new employment needs. New qualifications should:

- be in alignment with the EQF context (national developments with regard to the establishment of National qualifications frameworks and/or the introduction of the Dublin descriptors in higher education, etc.);
- define learning outcomes in such a way that allow comparability, transparency and mutual trust at sectoral, national and international level; and

- take on board the experience and views of all actors concerned, and especially these of learners.

However, key questions to this learning outcome approach remain open and evidence of what works and what not still remains scarce. While intensive reforms are taken place by national authorities to redesign qualifications and curricula with an outcome-orientation, the impact of these reforms to the individual learners is not yet visible nor measurable (Psifidou, 2010b).

This paper analyses how learning outcomes can be used for defining and describing single, specific qualifications. To do so, it explores the different - but often complementary – methodologies developed by selected test and pilot projects<sup>3</sup> to define qualifications profiles and curricula having as a common denominator the use of learning outcomes, and discusses the challenges arisen and lessons learned.

## **1. Sectoral approaches to define learning outcomes**

Learning outcomes should function as a “transmission belt” facilitating a linkage between those outcomes described in the level descriptors of the EQF or the national qualifications frameworks, and these found in national documents describing and certifying qualifications (qualification profiles, curricula, standards, etc.). However, the development of this linkage is often complex and should be underpinned by transparent approaches to inspire mutual trust. To illustrate how the interpretation of general EQF descriptors has been carried out at sectoral terms examples taken from the studied LdV pilot projects are presented and discussed in continuation.

In the **AMOR** pilot project for example, project promoters analyse curricula in two initial vocational trainings from the electrical engineering industry in Germany and Luxembourg, reformulate them on the basis of learning outcomes by the identification of seven working situations for electrical specialists and develop an activity matrix, to classify them to the EQF.

The analysis of the relevant curricula allowed collecting information about possible working situations that the graduates of the chosen programmes usually cope with. Working situations were considered as independent areas of professional activities (planning, organisation/implementation and control) and were divided in working situations of primary nature, meaning corresponding to branch-specific actions, and of secondary nature, representing supporting areas of action (according to the value

---

<sup>3</sup> For simplicity, each time reference is made to the aforesaid projects, their acronyms rather than the full title is used. For the full name of the project please refer to Annex. It is also important to note that projects’ results are not presented here in a detailed way, but only those outcomes that are relevant to the objectives of this comparative analysis have taken into consideration.

chain by Porter, 1992). The analysis of working situations was necessary to identify these typically informally and non-formally acquired learning outcomes that could not be found in the curricula, but are important to perform in job.

Based on this analysis, fifty learning outcomes were defined nineteen out of which were newly defined and added by the project experts in the electro industry. The results were put in an activity-matrix structured into seven working situations and checked for consistency. The industry experts had to decide if single cells of the activity-matrix have a higher importance than others and attribute weighting factors and the corresponding EQF level. This was the basis for classifying learning outcomes to the EQF referencing levels carried out by experts in vocational training of chambers and research institutes for VET and validated by industry experts. Each cell of the matrix (cell A I to D III) – as a crossing of primary and secondary working situations – was assigned to the EQF in two ways: by an undifferentiated classification- learning outcomes as a combination of knowledge skills and competences) (see table 1) and differentiated into knowledge, skills and competences (see table 2.)

**Table 1. EQF levels per cell across 5 partners<sup>4</sup> – undifferentiated EQF assignment**

A. Safety	4	4	4
B Taking care of customers	4	4	4
C. Documentation	3	4	4
D. Quality management	4	4	4
	I. Planning	II. Install, put into operation and deliver	III. Mantain, measure and repair

Source: AMOR project report, p.17

**Table 2. EQF reference levels per cell across 5 partners – results of the differentiated EQF classification**

A. Safety	4	4	4
	4,0 / 3,7/ 4,1	3,3 / 3,8 / 4,1	3,6 / 3,9 / 3,9
B Taking care of customers	4	4	4
	3,8 / 3,3 / 3,8	3,8 / 3,6 / 3,8	4,1 / 3,7 / 3,9
C. Documentation	4	4	4
	4,0 / 3,4 / 3,4	3,8 / 3,9 / 3,8	3,9 / 4,2 / 3,7
D. Quality management	4	4	4
	3,1 / 3,4 / 4,0	3,4 / 4,0 / 4,0	3,6 / 4,0 / 4,2
	I. Planning	II. Install, put into operation and deliver	III. Mantain, measure and repair

Source: AMOR project report, p.18

<sup>4</sup> Germany, Luxembourg, Austria, Poland and Hungary participated in this project.

For the final attribution of the corresponding level, the results per cell were compared between the two procedures. The matrix with the differentiated procedures was only slightly lower than this with the undifferentiated procedure.

A similar approach was followed by other pilot projects such as the **TransEQFrame**. However in this case, for identifying learning outcomes, the project partners referred to and analysed a richer source of national documents certifying and describing qualifications. National qualification profiles, EU Certificate Supplements (where available), framework curricula, legal executive orders, education acts, as well as training and examination regulations (including examination and occupational standards) from four occupational fields (business administration, chemistry, electronics and logistics) were analysed. Based on this document analysis, the selected qualifications to be referenced to the EQF have been first broken down into smaller sub entities “core activity areas” (similar to working situations identified in the AMOR project), mainly, directly taken from the descriptions of the respective occupational profiles. Then, learning outcomes including knowledge, skills and competences assigned to each “core activity area” were used for referencing “core activity areas” to EQF-levels (see table 3). Similarly, as in the majority of LdV projects examined both educational as well as trade specialists have been highly involved in this process.

**Table 3. TransEQFrame template referencing**

<b>Source:</b>	<b>Knowledge</b> Theoretical and/or factual knowledge	<b>Skills</b> Cognitive (involving the use of logical, intuitive and creative thinking) and practical skills (involving manual dexterity and the use of methods, materials, tools and instruments)	<b>Competence</b> Responsibility and autonomy	<b>EQF level</b>
List of core activity areas:				
	Description / comments for clarification			Referencing to EQF levels / comments for clarification
....				<b>EQF level</b>
....				<b>EQF level</b>
<b>Overall referencing</b>				<b>EQF level</b>

*Source: Project TransEQFrame, Synthesis report work package 6, p. 28*

Other projects focused on a single sector. This is the approach used for example in the **EQF-Frame** pilot project in the sector of tourism. Concepts and descriptions of explicit and implicit learning outcomes found in official sources were analysed and evaluated against occupational standards, level of academic and practical difficulty, and competence required at the labour market. Then the best fit approach was applied to match the learning outcomes identified with these of the EQF descriptors. Sector

experts were systematically involved to debate and map the identified learning outcomes to the descriptors of the EQF.

Similarly, the **Tiptoe** project analysing the trade sector, compares nationally developed occupational profiles with national educational qualifications or programmes to arrive at a transparent overview of differences and similarities between countries and between the labour market and the educational point of view. Four occupations have been identified within the trade sector (shop assistant, shop manager, logistics assistant and logistics manager) and analysed in terms of knowledge, skills and competences. Then these learning outcomes identified by employers were compared with those delivered by educators. Within each qualification and/or educational programme, “core tasks” were identified and associated with knowledge, skills and competences as in the case of the TransEQFrame project.

**Table 4. KSC analysis of educational programmes for the trade sector**

	Knowledge Theoretical and/or factual knowledge	Skills Cognitive and practical skills	Competence Responsibility and autonomy
List of core tasks /possible subtasks			
Description/ comments for clarification of KSC-items			
Core tasks A:			
(Subtask 1)			

*Source: TIPTOE Working guidelines for WP4: Researching trade qualifications from an educational point of view, September 2009, p.20*

Likewise, sectoral and educational experts, participating in the **Qualifise** project analysed in terms of learning outcomes syllabuses and assessment materials of qualifications in the financial services sector. On the basis of existing levelling methodologies in UK, a panel of experts developed one single approach for assigning EQF and NQF levels to examined qualifications and tested it in fifteen countries and thirty qualifications. The panel had to distinguish whether qualifications are predominantly based on Knowledge (K), Knowledge and Skills (KS), or full Competence (KSC). Once this distinction was made then each of these components was weighted in terms of approximate percentages according to the extent to which its learning is based on (a) ‘Knowledge’ / *knowledge and understanding*, (b) ‘Skills’ / *application and action* and (c) ‘Competence’/ *autonomy and accountability*. The analysis showed that qualifications may reflect aspects of all three learning categories, or of one or two of them. When assessing a qualification that it is mostly made up of pure knowledge, with some elements of skill but little or no elements of ‘competence’ assessed, the panel was recording the following result:

**Table 5. Example for levelling knowledge-based qualifications**

<b>Learning Category</b>	<b>Weighting</b>	<b>Level</b>
Knowledge	90%	4
Skills	10%	3
Competence	0%	n/a
Overall Level = 4		

*Source: Equalifise project, 2009, Quality assurance system: A guidance for levelling qualification in the financial services sector. Annex 2, p. 16.*

Equally, a qualification based on competence assessment might have the following result:

**Table 6. Example for levelling knowledge-based qualifications**

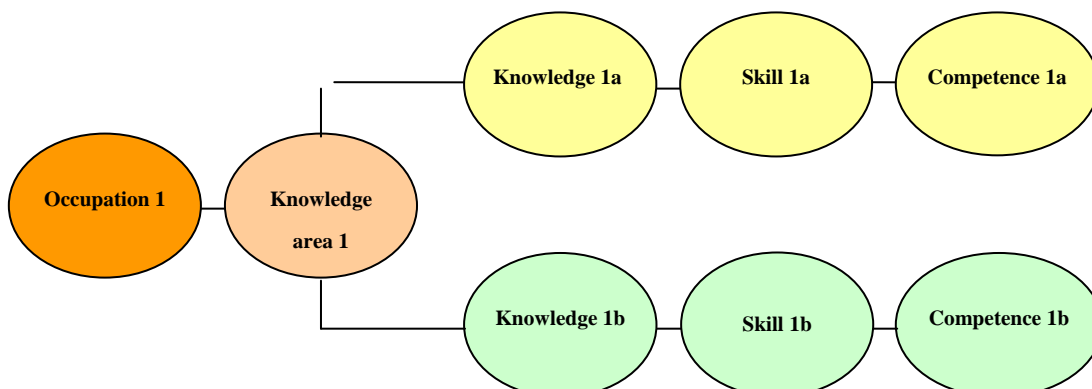
<b>Learning Category</b>	<b>Weighting</b>	<b>Level</b>
Knowledge	10%	3
Skills	20%	4
Competence	70%	4
Overall Level = 4		

*Source: Equalifise project, 2009, Quality assurance system: A guidance for levelling qualification in the financial services sector. Annex 2, p. 16.*

Once each unit of the qualification was reviewed and allocated a level, the overall level of the qualification was determined. Similarly, when each unit was reviewed and a percentage weighting for each learning category recorded, the overall weighting for each learning category was determined. For this process, the best fit approach was again followed.

The **Food-fit** project developed an inventory of occupations in the food companies linked to the EQF descriptors. Project partners analysed the key occupations in the food sector, identified functional areas within each occupation and partner country and related them to the most relevant technical occupations in the sector. For each occupation, “areas of knowledge” were identified which were then related to learning outcomes (knowledge, skills and socio-labour competences required for carrying out the job). The final result is presented in the figure below:

**Figure 1. Structure for description of learning outcomes**



*Source: adapted from Food-fit project report. Work package 3. Design of tools for the sectoral development of EQF, p. 26.*

For the description of learning outcomes, two methodological references were used: functional analysis<sup>5</sup> and Bloom's taxonomy<sup>6</sup>. A common lexicon was developed to describe and write learning outcomes, using the principles of the European Qualifications Framework (EQF), verbs of action identified in Bloom's Taxonomy (cognitive domain) and the dictionary of skills Hay McBer, recommended by the OIT / Cinterfor. For the description of knowledge, action verbs were used within the fields of knowledge, comprehension and analysis of situations. Skills were described using action verbs within the fields of implementation, synthesis and evaluation, while competences were described within the field of social, organisational and personal skills more frequently used in the labour market (see table 7).

---

<sup>5</sup> Functional analysis is a method used to identify the required competences of a productive function by means of a deductive strategy. By concentrating on the functions or results/outcomes instead of the activities, the descriptions produced are independent of the technology or methods used to achieve the function. In other words, instead of describing what people are doing, functional analysis describes what people have to achieve (Mitchell, L. and Mansfield B., 1996).

<sup>6</sup> Blooms taxonomy distinguishes between the cognitive, attitudinal (affective) and psychomotor domains, and between the levels knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom,1956).



**Table 7. Model of descriptive table for learning outcomes: Example of the occupation Quality Control Technician**

Occupation	Knowledge area	Description of knowledge	Skills	Competences
<b>Quality Control Technician</b> (ISCO CODES: 211- Physical and earth science professionals. 214- Engineering professionals (excluding electrotechnology). 2265- Dieticians and nutritionists)	Food safety	Food hygiene Microbial and parasitic contamination. Microbiological deterioration. - Path of access to knowledge: ISCED 6.	Techniques of evaluation of nutritional state, critical analysis and interpretation of results - Path to access: university training. Masters degree. Permanent training	Focus on order and quality. Continual verification and control of work and information. On-the-job learning
	Quality control	Standardisation and food legislation - Path of access to knowledge: ISCED 6.	Necessary processes for adapting the food industry to ISO rules. - Path to access: Self-study. Updating of knowledge. Seminars.	Conceptual thought. Ability to identify the relationship between situations that aren't obvious. On-the-job learning.

*Source: adapted from Food-fit project report. Work package 3. Design of tools for the sectoral development of EQF, p. 19*

Once occupations were described in EQF terms for each functional area, the best fit approach was applied for referencing levels to the occupations. The final tool developed for the referencing process contained: the name of the occupation in question; the attributed functional area; the functions and tasks to be performed; the official name of ISCO occupation; the NACE code; the EQF level; the evolution of the occupation (whether it is an emerging occupation in medium or larger companies, or a traditional occupation with new skills and competences, etc.), and the reasons for choosing to analyse and reference this occupation.

Other LdV projects aim at the development of a sectoral -usually competence- meta-framework. The partners of the **EQF-sports** pilot project, for example, aiming at a European sectoral framework on sport activities, use functional analysis to develop a functional map (this is the graphic representation of the results of the functional analysis) to specify the current and future needs of employment in sports sector. On the basis of this functional map, a detailed sector competence framework based on units and credits is developed. This describes both the competences acquired in occupations as well as the competences to be achieved through curricula and learning programmes. This competence framework is divided into manageable units made of learning outcomes – broken down by level into competences, skills and knowledge

and the range and scope of coverage required (in line with the EQF). These units then are given a level from the EQF and corresponding credits.

**Table 8. Example of competence framework in Fitness for EHFA Basic Instructor**

<b>B1.1 Analyse the needs, abilities and potential of individuals and groups</b>			<b>Instructor Learning Outcomes Mapping to a separate document</b>	
<b>Competency</b>	<b>Skills</b>	<b>Range</b>	<b>Basic</b>	<b>Advanced</b>
<b>B1.1.3</b>  Analyse information and determine risk factors	1. Interpret all recorded data using accepted criteria	All data gathered Using standard criteria Norms	2.7 3.9 3.10 4.10	<b>8</b>  <b>This number refers to the section in the knowledge framework</b>
	2. Prioritise key needs and responses	According to client health status According to client fitness status According to clients expectations	2.7 2.15 3.10 3.9 4.10 4.11	5 <b>8</b> 9
	3. Identify and prioritise risk factors	Medical, physical and psychological Injury status Fitness levels Factors that might affect clients ability to participate in programme	2.7 3.9 4.10	<b>8</b>
	4. Review and confirm data with client	Clarify data Utilising communication and Interpersonal Skills		
	5. Develop a summary profile of client to assist in the design of a programme to meet clients needs	Collate and categorise data		5 <b>8</b> 9

Source: EQF sport project, WP 5, Guide to develop a sector competence framework based on units and credits, March 2008, p. 6

Another example is drawn from the approach applied in the **EASCMF** pilot project which develops a European automotive sector competence meta-framework. To do so, project partners analysed and compared publicly recognised professional profiles. Based on the criteria of topicality, comparability and availability in the partner countries, four national descriptions considered as national variants of a profile in the automotive sector were selected for more detailed analysis. Additional material which could *implicitly* comprehend information about the abilities required to perform in work was also analysed (prerequisites of access to training, curricula, methods of

training, learning locations, examination regulations, etc.). Then, the EQF categories were identified within the descriptions of national profiles: knowledge, skills and competence required to achieve the reference objective, in this case, to: *deliver a car which works to the optimum satisfaction of the customer, at the same time meeting the requirements of the enterprise.*

The **EQUFAS** project followed an original approach somehow beginning from what for other projects is the last step and going backwards. Project partners first defined the EQF level to which they wanted to refer the qualifications from the agriculture sector (level 3) and then defined a common framework based on which learning outcomes-based curricula and assessment tools were designed. The other originality of this project is the way learning outcomes have been identified. While other projects have analysed official sources and/or performed a work analysis in each partner country for identifying learning outcomes, the EQUFAS project developed an experiential method: observed and assessed students while working in companies associated with six different branches of the Agricultural sector (during pilot study periods organised by the project partners) outside of their country of study. This approach allowed first to conclude on those generic competences which are of outmost importance for mobility reasons (language skills, communication skills, intercultural competences, etc.) and to assess whether more specific competences acquired through their studies in their country matched with these needed to work in a different country. They then developed a common framework for the agriculture sector on the basis of the 8-EQF levels and the four domains and eleven dimensions of the 4CYOURWAY-framework<sup>7</sup> (see below). The three main building blocks of the EQF (knowledge, skills and competence) were then covered by at least one or more dimensions of the 4CYOURWAY-framework.

**Table 9. EQUFAS common framework for the agriculture sector.**

		1	2	3	4	5	6	7	8
<b>Responsibility</b>	<b>Responsibility</b>								
	Autonomy								
<b>Range</b>	<b>Public</b>								
	Timeline								
<b>Complexity</b>	<b>Tasks</b>								
	Procedures								
	Knowledge and understanding								
<b>Transfer</b>	<b>Ambiguity</b>								
	Change								
	Range								

Source: EQUFAS project report, p.15-16

<sup>7</sup> [www.4cyourway.nl](http://www.4cyourway.nl) and <http://www.linqueconsult.nl/nieuws/index.php?id=59>

## 2. Insights and lessons learned from pilots

The examined LdV pilot projects have developed and tested interesting methodologies to identify the expected learning outcomes in the respective sectors and to redesign curricula and qualification profiles accordingly. This testing exercise allowed project promoters to draw important conclusions summarised in the following points:

### 1. The degree to which outcome orientation is realised in curricula and qualification profiles differs across the partner countries of the studied projects

Some projects analysed curricula and found a weak outcome-orientation (e.g. certain occupations in the *€qualifise* project). Although curricula contain a lot of information on study times, methods and contents, there was little (or none) information on expected learning outcomes. In this case, project partners have redesigned curricula in terms of learning outcomes using different methods. Other projects found that actually in opposition to earlier assumptions, the analysed curricula contain a strong outcome-orientation (e.g. *AMOR*); but still curricula should be redesigned to take into consideration learning outcomes not captured in formal curricula acquired through non formal and informal means.

The degree to which curricula are outcome-oriented varied significantly between sectors and countries. In the *TransEQFrame* project for example, project promoters concluded that some curricula of the examined qualifications were strongly outcome-oriented (in the Netherlands), in other cases this outcome orientation was supported by framework conditions -system characteristics (in Denmark); other were broken down into learning units defined in terms of learning outcomes and assessment criteria (in Finland); other were partly outcome oriented containing elements more or less geared towards learning outcomes, but with no systematic description of levels or dimensions of learning outcomes. In other cases, the focus was rather on the description of input factors (in Austria); and finally some were totally input-oriented (in Bulgaria).

In any case, at the level of curriculum, it is too simplistic to characterise these approaches only as input- or outcome-focused curricula. There is actually no pure type of input- or outcome-curriculum defined in theory. It is possible to say on the basis of empirical research (Cedefop, 2010), that curricula are always mixed and that the kinds of “outcomes” they define varies hugely among the countries, so that even two outcome-oriented curricula look very different. So often, learning outcomes do not replace learning inputs (contents, teaching and learning methods, timetables, etc.)

but in most cases, may have a more or less prominent role for defining these inputs. LdV pilot projects have described curricula and qualifications using a balance between input and outcome elements. Referencing tables include information on knowledge, skills and competences of the respective qualifications as well as the name of the qualification degree giving access to this occupation, the duration of studies, etc. (e.g. Food-fit project).

**2. When learning outcomes are formulated in a very operational way for specific occupations, there are matching difficulties to the generic descriptors of the EQF.**

The analysis of national sources documenting qualifications shows that learning outcomes may be expressed in rather broad or narrow terms and this determines the degree of difficulty for the referencing process. When learning outcomes are defined at the level of units for example, they express the specific outcomes/objectives of single teaching units and thus precisely determine the contents of training and education programmes. In some cases, learning outcomes refer directly to the professional context, whereas in others they rather refer to a body of knowledge to be assimilated by the learner. Some countries define assessment criteria/performance criteria, whereas in other countries outcome statements are too vague to be used directly for assessment.

Differentiations also exist along the divide between competence and associated knowledge. In some cases, a difference is made between what students should be able to do, and what they should know and understand, whereas in other cases associated knowledge is not formulated in terms of learning outcomes but rather as a list of items to be addressed in classroom. These differentiations and the often disparity between expected learning outcomes in curricula and achieved learning outcomes defined in qualifications have posed difficulties to project partners testing different referencing approaches (e.g. in €qualifise project).

**3. Complementary research methods to desk analysis are required to identify learning outcomes acquired also by informal and non formal means, often not explicitly stated in official documents.**

Promoters of different pilot projects noted that national documents describing qualifications are not easy to be interpreted in EQF terms as there were found conceptual ambiguities between the EQF key terms and their understanding and use at national and/or sectoral level. This is the case even in countries with an inherent outcome orientation in their systems. Another conceptual issue of that kind is present when there are differences between the competence models used in national

qualifications systems and the EQF dimensions (e.g. the German national qualifications framework). It was also found in many cases that the official documents describing national qualifications can not supply the information that corresponds fully to the EQF criteria. Therefore, complementary methods to desk research were used by LdV projects' partners to identify these learning outcomes required for carrying out the job of a specific occupation and acquired through non formal and informal means.

In many projects functional analysis is used for the identification of work requirements (e.g. the Food-fit project). The starting point for determining the work requirements and training needs are the study and analysis of the system of production and the labour market. Occupations are divided into tasks and duties, of which the function is identified to determine skills and knowledge requirements independently of a specific work-place. These requirements are clustered and transformed into learning outcomes with associated performance criteria.

**4. Tools developed within the LdV projects can be valuable bases for designing qualification and curricula based on learning outcomes as well as for referencing qualifications to the EQF levels.**

These tools may be “competence matrixes” for mapping competences to a specific type of course; templates for curricula covering the structural and legal aspects of a curriculum; guidelines on how to write a qualification profile; and checklists for curriculum designers with relevant things to keep in mind. Others, such as the AMOR project, develop an “activity-matrix” based on curriculum analysis and identification of learning outcomes via working situations.

The DACUM<sup>8</sup> method and Bloom's taxonomy<sup>9</sup> are often cited as tools for the clustering of learning outcomes (e.g. Food-fit project). Bloom's taxonomy remains until now the most widely used taxonomy for describing learning outcomes and assessment criteria. Especially due to the increasing implementation of national qualification frameworks and outcome-based approaches for the design of curricula, the use of this taxonomy is very popular in the European member states but other taxonomies are used as well (Psifidou, 2010c). In addition to these well-known methods, other projects use a broad set of empirical research methods (such as surveys, workshops, interviews, observation, etc.) to carry out the levelling process.

---

<sup>8</sup> An acronym for Developing A Curriculum, DACUM is a Structured Group Interview (SGI) Technique commonly used to develop curriculum for both academic and vocational course content.

<sup>9</sup> See note 6.

**5. There is room for different interpretations concerning the individual categories of learning outcomes in the EQF (knowledge, skills and competence).**

Despite the explanations on the three learning outcome categories in the EQF there is still room for interpretation concerning the individual categories. For example, the EQF describes competences as “taking responsibility and acting independently”. The term “responsibility” was understood by some project partners basically as a legal responsibility, others, however, rather saw it as an informal “taking care of” or operative participation in the process of qualifications establishing. Project promoters explained that without clarification among different stakeholders involved in the referencing process, this might lead to a distortion of future EQF classification.

**6. Identifying and involving the key stakeholders concerned is crucial for a transparent and comparable approach to learning outcomes in designing curricula and qualification profiles.**

All LdV projects have involved both education specialists as well as experts in the respective sector for developing the referencing tools and deciding on the levelling of the piloted qualifications. In many of them, the involvement of experts from different backgrounds (especially employers and employees) in the process of work analysis was an essential element of the methodological design. On the basis of their personal experience and knowledge of a sector or an occupation, they provided inputs in the curriculum development process or gave feedback on the results. Some projects (the AMOR, Equalifise, etc.) even recommend the type of stakeholders who should be involved in the entire process (teachers, educationalists, sector experts, etc.), the qualifications and knowledge that should have and the different functions that should perform. To identify and contact the key stakeholders, different approaches have been used by project partners (surveys, questionnaires, workshops, *in-situ* research, etc.).

## Concluding remarks

To summarise, the presented examples show how an approach of identifying and describing learning outcomes in curricula and qualifications can take different but complementary forms among LdV projects testing the EQF, with some of them piloting on qualifications from different sectors (occupational domains), while other focus on one specific sector (tourism, sports, financing, food, etc.). All of them though use the learning outcomes approach as a means to carry out this “interpretation” process, breaking down qualifications into smaller entities (core-activity areas, core tasks, working situations, etc.) and using the best fit approach for associating levels to units and/or qualifications.

A commonality in the approaches of these projects is their starting point; they all use the same sources for collecting information about learning outcomes: they refer to national documents underpinning qualifications (curricula, syllabuses, qualification profiles, training and study regulations, training programmes, etc.), and usually, complement the information found in these sources with learning outcomes identified through work analysis. Some LdV pilot projects while interpreting the generic EQF terms into sectoral concepts, aim to develop also a sectoral meta-framework which can take different forms (this is usually a competence framework).

The results of this preliminary analysis highlight issues requiring attention and actions from policy-makers and practitioners in vocational education and training. However, they also reveal the limits of our knowledge and understanding of current developments and of the effects and implications of learning outcomes approaches in vocational education and training. Building on new EU and international analytical studies of learning and teaching processes, there are still many issues in need of further research.

In recent years, Cedefop’s analytical work has increasingly focussed on learning outcome approaches in vocational education and training to design and describe qualifications, to set standards and to influence quality assurance, validation and certification approaches. Between 2009 and 2011, Cedefop organised two International Workshops<sup>10</sup> to debate about innovative curriculum policies and practices in Europe and beyond. In 2010, a comparative study in nine European countries on learning outcome approaches in VET curricula was published to provide a better understanding of recent curriculum policies and point to main tendencies and

---

<sup>10</sup> <http://www.cedefop.europa.eu/EN/events/4432.aspx> and <http://events.cedefop.europa.eu/curriculum-innovation-2011/>



challenges in this field (Cedefop, 2010). This research is now being expanded in all 32 countries participating in ET 2020 and will continue in the coming years.

## Bibliography

- Bloom B S (ed.) (1956). *Taxonomy of Educational Objectives, the classification of educational goals – Handbook I: Cognitive Domain* New York: McKay.
- Cedefop (2009). *The shift to learning outcomes. Policies and practices in Europe*. Luxembourg: Publications Office. (Cedefop reference series, 72). [http://www.cedefop.europa.eu/etv/Upload/Information\\_resources/Bookshop/525/3054\\_en.pdf](http://www.cedefop.europa.eu/etv/Upload/Information_resources/Bookshop/525/3054_en.pdf) [cited 16.7.2010].
- Cedefop (2010). *Learning outcomes approaches in VET curricula. A comparative analysis of nine European countries*. Luxembourg: Publications Office. (Cedefop research paper No 6). [http://www.cedefop.europa.eu/EN/Files/5506\\_en.pdf](http://www.cedefop.europa.eu/EN/Files/5506_en.pdf)
- Cedefop (2011). 2nd International Workshop on Curriculum Innovation and Reform: An Inclusive View to Curriculum Change. <http://events.cedefop.europa.eu/curriculum-innovation-2011/>
- European Parliament; Council of the European Union. 2008. Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning. *Official Journal of the European Union*. C 111, 6.5.2008, p. 1-7. Available from Internet: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=oj:c:2008:111:0001:0007:en:pdf> [cited 16.7.2010].
- Hay McBer. (1996). *Scaled Competency Dictionary*. Boston: Hay/McBer.
- Mitchell, L.; Mansfield, B. (1996). *Towards a competent workforce* Aldershot: Gower
- Porter, M.E. (1992) *Wettbewerbsvorteile (Competitive Advantage) - Spitzenleistungen erreichen und behaupten (Zalety konkurencji – osiaganie oraz utrzymywanie maksymalnych rezultatów)*, wyd. 3. Frankfurt nad Menem.
- Psifidou, I. (2009). Cedefop International workshop Conclusions “Curriculum innovation and reform: policies and practices”, 9- 10 November 2009, Thessaloniki, Greece. <http://www.cedefop.europa.eu/EN/news/15108.aspx> [cited 16.7.2010].
- Psifidou, I. (2010a). “*Learning outcomes changing written and taught curricula*” in the 12th TTnet annual conference: “Better Teaching for Better Learning: Supporting Teachers and Trainers Meeting Challenges of Today and Tomorrow”, Thessaloniki, 11-12 February 2010. <http://www.cedefop.europa.eu/EN/news/15466.aspx> [cited 16.7.2010].
- Psifidou, I. (2010b). “*Re-imagining the school curriculum: the revolution of learning-outcome approaches in Europe*” in Conference Proceedings, the 54th Annual Conference of the Comparative and International Education Society, 28 /02 - 6/03, Chicago-Illinois. <http://www.cies2010.msu.edu/> [cited 16.7.2010].
- Psifidou, I. (2010c). “Bridging knowledge with skills and competences in school curricula: Evidence from policies and practices in 9 EU countries”. Paper published in the Conference Proceedings of the XIV World Congress of Comparative Education Societies. *Bordering, re-bordering and new possibilities in education and society*. 14-18 June, Istanbul. <http://libserver.cedefop.europa.eu/vetelib/2010/75168.pdf> [cited 9.2.2011].

## **Annex: LdV Projects' acronyms**

<b>AMOR:</b>	Approach for the Matching process of Outcome-based curricula to the EQF in vocational education
<b>EASCMF:</b>	European Auto Sector Competence Meta Framework
<b>EQF-Frame:</b>	EQF Flexible References and Methods of Evaluation
<b>EQF-sports:</b>	Implementing EQF in the Sports Sector
<b>Equalifise:</b>	European Qualification Assurance League in Financial Services
<b>EQUFAS:</b>	Experiences with the EQF in the Agricultural sector
<b>Food-fit:</b>	Methodological proposals to facilitate the introduction of the European Qualifications Framework (EQF) in the food sector of the European Union
<b>Tiptoe:</b>	Testing and Implementing EQF- and ECVET-Principles in Trade Organizations and Education
<b>TransEQFrame:</b>	Trans-European Qualifications Framework Development)