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Translation from Romanian language

Excerpt

Methodological Guide for writing learning outcomes

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LEGAL BASIS

Considering:

A. The European context

1. Cedefop, 2017, Defining, writing and applying learning outcomes - A European handbook

[....]

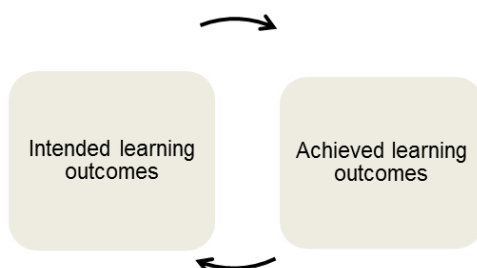
Throughout Europe, the term ‘learning outcomes’ is increasingly embedded in the vocabulary of education and training policies (Prøitz, 2014). Cedefop (2014) provides two interrelated definitions of this concept:

- learning outcomes are defined as statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence;
- learning outcomes are defined as ‘sets of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal or informal.

These two definitions point to the relationship between intended and actually achieved learning outcomes.

[....]

Figure 1. **Relationship between intended and achieved learning outcomes**



The intended learning outcomes represent what the education and training provider wants the student to achieve, while the achieved learning outcomes represent what the student actually knows at completion of study programme.



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2. EUROPEAN COMMISSION RECOMMENDATION of 26.04.2017 on the European Pillar of Social Rights

[...]

1. Education, training and life-long learning

Everyone has the right to quality and inclusive education, training and life-long learning in order to maintain and acquire skills that enable them to participate fully in society and manage successfully transitions in the labour market.

[...]

3. Findings and recommendations of the European Council on the National Reform Programme of Romania, including the Council opinion on the Convergence Programme of Romania

a. 2013-2014 - Romania faces a major challenge in raising the quality of its education and training system. [...] **Mismatches between skills and labour- market demand are characteristic of a large proportion of vocational and tertiary education programmes**, with the poor level of vocational skills being a specific challenge. **The high unemployment rate among tertiary graduates and the rate of over-qualification** make a further alignment of tertiary education with the labour market a high priority. [...].

Recommendation: Speed up the education reform [...] **Step up reforms in vocational education and training. Further align tertiary education with the needs of the labour market** and improve access for disadvantaged people. [...].

[*COUNCIL RECOMMENDATION of 9 July 2013 on the National Reform Programme 2013 of Romania and delivering a Council opinion on the Convergence Programme of Romania, 2012-2016 (2013/C 217/17)*]

b. 2014-2015 - The Education Reform of 2011, which set a long-term agenda for upgrading the quality of education at all levels, is not yet fully operational [...] Following a sharp decline in vocational education and training in the last 20 years, several reforms and pilot projects have been initiated in recent years but the availability of vocational education and training, its relevance to the labour market and business involvement in work-based learning and apprenticeships remains low. **Important skills mismatches persist for tertiary graduates and the link between business and academia remains weak**, as shown by a high unemployment rate and many university graduates being employed either in professions not corresponding to their training or in jobs requiring lower levels of qualification. **Participation in lifelong learning activities continues to be among the lowest in the Union** [...].



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Recommendation: Increase the quality and access to vocational education and training, apprenticeships, tertiary education and of lifelong learning and adapt them to labour market needs. [...]

[COUNCIL RECOMMENDATION of 8 July 2014 on the National Reform Programme 2014 of Romania and delivering a Council opinion on the Convergence Programme of Romania, 2014 (2014/C 247/21)]

c. 2015-2016 - Romania faces several challenges in the area of education [...] **participation in lifelong learning remains far below the EU average; the quality and labour market relevance of higher education is inadequate; and the tertiary attainment rate remains the second lowest in the Union.** Romania has started addressing these challenges, with varying degrees of progress being made in the different areas, and, to date, little visible end-effect. [...] A strategy on tertiary education has been drafted, the aim of which is to increase the relevance of higher education by aligning it more closely with labour market needs and to improve the accessibility of higher education for disadvantaged groups. Measures have been implemented to improve vocational education and training and apprenticeships schemes.

[COUNCIL RECOMMENDATION of 14 July 2015 on the 2015 National Reform Programme of Romania and delivering a Council opinion on the 2015 Convergence Programme of Romania (2015/C 272/01)]

d. 2016-20017 - Romania still faces education challenges. **Several strategies cover lifelong learning, vocational education and training, tertiary education and early school leaving.** However, the early school leaving rate remains well above the EU average, in part due to significant implementation delays of the strategy approved in 2015. Prevention and remedial programmes are limited. [...] **Participation in upper secondary vocational education and training is above the EU average, but the dropout rates remain high.** The tertiary attainment rate is increasing, but the quality and labour market relevance of higher education is limited. **Participation in adult education is very low.**

Recommendation: [...] Take action to prevent early school leaving and increase the provision of quality education [...].

[COUNCIL RECOMMENDATION of 12 July 2016 on the 2016 National Reform Programme of Romania and delivering a Council opinion on the 2016 Convergence Programme of Romania (2016/C 299/18)]



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4. The comments on education included in the European Commission Country Report for 2017

[....]

The quality and relevance of tertiary education for the labour market remains a challenge. Tertiary attainment is the one of the lowest in the EU (25.6 % in 2015, compared to 38.7 % EU28) and unlikely to improve significantly due to low passing rates at the baccalaureate (68.1 % in 2016) and high early school leaving. [....] the employment rate of graduates (77 % in 2015 vs 93 % in 2008).

Progress in vocational education and training (VET) is insufficient to meet labour market needs. Dual learning was recently introduced to support the reform of the VET system by offering private companies fiscal incentives for providing student training. [....] However, VET qualifications and curricula continue to be insufficiently aligned with labour market needs.

[....]

The unequal provision of quality education weakens human capital potential. [....] Persistently high early school leaving and low tertiary attainment do not meet the increasing need for a skilled labour supply against the background of persistent emigration.

5. ECTS Guide 2015

„Learning outcomes - Statements of what a learner knows, understands and is able to do on completion of a learning process. The achievement of learning outcomes has to be assessed through procedures based on clear and transparent criteria. Learning outcomes are attributed to individual educational components and to programmes at a whole. They are also used in European and national qualifications frameworks to describe the level of the individual qualification.”

6. Communication from the Commission on a renewed EU agenda for higher education

“2. PRIORITIES FOR ACTION

It is time to give new direction to EU support for higher education. This will address the four challenges above by focusing on four corresponding priorities for action, supported by EU level activities:

1. Tackling future skills mismatches and promoting excellence in skills development;
2. Building inclusive and connected higher education systems;
3. Ensuring higher education institutions contribute to innovation;
4. Supporting effective and efficient higher education systems.

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[COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on a renewed EU agenda for higher education, {SWD(2017) 164 final, 30.5.2017 COM(2017) 247 final}]

7. Council Recommendations on the European Qualifications Framework for lifelong learning

“[....]

1. Use the EQF to reference national qualifications frameworks or systems and to compare all types and levels of qualifications in the Union that are part of national qualifications frameworks or systems, in particular by referencing their qualification levels to levels of the EQF set out in Annex II and by using the criteria set out in Annex III.2.

2. Review and update, when relevant, the referencing of the levels of the national qualifications frameworks or systems to the levels of the EQF set out in Annex II and using the criteria set out in Annex III, with due regard to the national context.3.

3. Ensure that qualifications with an EQF level are in accordance with the common principles for quality assurance set out in Annex IV, without prejudice to national quality assurance principles that apply to national qualifications.4.

4. Where appropriate, promote links between credit systems and national qualifications frameworks or systems taking into account the common principles on credit systems set out in Annex V, without prejudice to national decisions to (i) make use of credit systems; and (ii) relate them to national qualifications frameworks or systems. Those common principles will not lead to an automatic recognition of qualifications.

[...]

(e) ‘learning outcomes’ means statements regarding what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy;

[...]



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ANNEX VI

Elements for data fields for the electronic publication of information on qualifications with an EQF level

DATA			Required/Optional
Title of the qualification			Required
Field ^{(*)1}			Required
Country/Region (code)			Required
EQF Level			Required
Description of the qualification ^{(*)3}	Either	Knowledge	Required
		Skills	Required
		Responsibility and autonomy	Required
	Or	Open text field describing what the learner is expected to know, understand and able to do	Required
Awarding body or competent authority ^{(*)2}			Required
Credit points/notional workload needed to achieve the learning outcomes			Optional
Internal quality assurance processes			Optional
External quality assurance/regulatory body			Optional
Further information on the qualification			Optional
Source of information			Optional
Link to relevant supplements			Optional
URL of the qualification			Optional
Information language (code)			Optional

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DATA		Required/Optional
Entry requirements		Optional
Expiry date (if relevant)		Optional
Ways to acquire qualification		Optional
Relationship to occupations or occupational fields		Optional

(*1) ISCED FoET2013

(*2) The minimum required information on the awarding body or the competent authority should facilitate to find information about it, which would include its name, or if applicable the name of the group of awarding bodies or competent authorities, completed with a URL or contact information.

(*3) This description shall consist of open text fields, with no prescribed use of standard terminology and no obligation for the Member States to translate the description into other EU languages.

B. *The national context*

1. The provisions of National Education Law no. 1 /2011

[....]

Art. 4. The main purpose of the education and vocational training of children, young people and adults is to develop competences, in the form of a multifunctional and transferable set of knowledge, skills/abilities and aptitudes, necessary for:: [...]

c) Holding a job and taking part into the functioning and development of a sustainable economy, [...]

Art. 117. – The mission of higher education is to generate and transfer knowledge to the society:

a) by basic and continuous training at academic level, for personal development, professional insertion and in order to satisfy the need for competency of the socioeconomic environment [...]

Art. 137.- (1) The academic educational program represents a group of teaching, learning, research, practice and evaluation curricular units planned so that they lead to an academic training certified by a diploma and a diploma supplement.

(2) The curriculum of the educational program matches the profile of the training, defined in the National Training Framework. The curriculum of an educational program is elaborated so that it maximizes the chances to obtain the desired training and is approved by the university Senate.

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(3) The curriculum matching the qualification offered by the educational program is an essential aspect of the quality assurance process.

(4) The higher education educational programs are grouped by subjects and organized by 3 study cycles: graduation, master and PhD.

(5) The higher educational programs offer access to positions and professions specific to each finalized academic study cycle

[....]

Art. 148. - (1) The educational programs plan and organize the work load specific to teaching, learning, application and examination activities, in compliance with the Transferable Credits European System ECTS/SECT, expressing it in education transferable credits. An education credit consists in the quantity of guided and interdependent intellectual work necessary for the individual finalization by a student of a unit of a course within an university education program, completed with the validation of the learning outcomes.

[....]

Art. 341. – (1) The National Qualifications Framework is an instrument for the classification of qualifications according to a set of criteria corresponding to certain specific levels of learning, aiming at integrating and coordinating the national sub systems of qualifications and at improving the transparency, the access, the progress and the quality of the qualifications in relation to the labour market and the civil society.

(2) The National Qualifications Framework is implemented for the national system of qualifications obtained in the general secondary education, in the professional and technical education, the continuing professional training and the apprentices' training, the higher education, in formal, informal and non formal lifelong learning contexts.

(3) The National Qualifications Framework allows the acknowledgment, the measure and the connection of all the results of the learning obtained in formal, informal and non formal learning contexts and assures the coherence of the certified qualifications and titles. The existence of a national qualifications framework prevents the duplication and overlying of the qualifications and helps the learners to knowingly make decisions on career planning and facilitates the professional evolution on the perspective of lifetime learning.

(4) The National Qualifications Framework contributes to the quality assurance in the professional training system

[....]

Art. 345. - (1) For purposes of this law, the terms referring to the identification, assessment and recognition process of the learning results are defined as follows:



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a) learning outcomes – represent what a person knows, understands, and is capable of doing at the end of a learning process and that is defined as knowledge, skills and competencies;

b) identification of learning outcomes - represents the process during which the individuals alone or with the help of the specialized staff become aware of their competences;

c) assessment of learning outcomes - represents the process during which it is established that a person has acquired certain knowledge, skills and competences;

d) validation of learning outcomes - represents the process whereby it is confirmed that the results obtained by a person at the end of the evaluated learning process comply with the specific requirements for a certain unit of results of learning process or a qualification;

e) certification of learning outcomes - represents the process during which the results obtained by the person who learns in various contexts, are formally confirmed after an assessment process. It ends with a degree or a certificate.

(2) The acknowledgement of the results of the learning process is a process whereby the results of the validated learning process are certified and validated by granting learning result units or qualifications.

(3) The learning outcomes in non formal and informal contexts are identified, evaluated and recognised on the basis of a methodology elaborated by the Ministry of Education, Research, Youth, and Sports, the Ministry of Labour, Family and Social Affairs and the National Qualifications Authority and are approved by governmental decision.

(4) The Ministry of Education, Research, Youth, and Sports shall prepare and approve under order of the Minister of Education, Research, Youth and Sports the methodology for the recognition of the non formal and informal learning results of the teaching staff and for their being considered as credits for education and professional training.

Art. 346 (1) The services of identification, assessment and recognition of the learning results can be provided by state-owned or private institutions, duly authorized to do so.

(2) The degrees and certificates granted by the authorized institutions after the assessment of the learning results in non formal and informal contexts have the same effects as the other methods for assessment and certification of the knowledge and the competences in the formal education and professional training system, in order to hold a job or to continue the education and the professional training in the formal systems.

(3) The learning results in non formal and informal contexts can be recognized explicitly through assessments in centres for the assessment and certification of the competences or implicitly by graduating from a formal study programme.

Art. 347 (1) The programs of initial training and continuing professional training as well as the systems for the assessment of the learning results in non formal and informal contexts will assure



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the horizontal and vertical occupational mobility by the use of the transferable professional credits system for education and vocational training.

(2) The methodology for granting the transferable professional credits is elaborated by the Ministry of Education, Research, Youth, and Sports, the Ministry of Labour, Family and Social Affairs, the Ministry of Culture and National Heritage and the National Qualifications Authority and is approved by governmental decision.

(3) The learning outcomes and their associated transferable professional credits previously obtained in formal contexts or after the evaluation of the non formal and the informal learning outcomes are transferred and integrated in the professional training program the learning person attends.

[....]

Art. 349. - (1) The permanent education portfolio represents an instrument that facilitates the identification and formulation of the personal abilities and competences and their valorisation in the school path and the professional path and in the insertion on the labour market of each individual.

(2) The permanent education portfolio contains records of the learning outcomes obtained in educational formal, non formal and informal contexts.

(3) The educational portfolio also includes the European instruments that stress the learning outcomes of an individual, such as: EUROPASS, and YouthPass.

[....]

- 2. The responsibilities of the National Qualifications Authority in accordance with the Law for approving the Government Ordinance no 96/2016 for amending and supplementing normative acts in the fields of education, research, professional training and health (the form adopted by the Chamber of Deputies and sent to the Parliament, 19.09.2017)**

[....]

13. At article I point 17, paragraph (2) of article 340 shall be modified and have the following content:

- a) develops, implements and updates the National Qualifications Framework and the National Qualifications Register based on harmonization with the European Qualifications Framework;
- b) ensures the compatibility of national qualifications system to other European and international systems of qualifications;



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- c) proposes to the Ministry of National Education elements of national policies and strategies, normative acts regarding the national qualifications system and the development of human resources;
- d) coordinates and approves at national level the occupational standards and coordinates the elaboration of the professional training standards;
- e) can develop qualification standards, in accordance with the methodology approved by joint order of the minister of national education and the minister of labour and social justice;
- f) participates in developing plans or programs of national interest in the qualifications and adult training field;
- g) submits to the sectoral committees, for validation purposes, the occupational standards developed based on the methodology approved by joint order of the minister of labour and social justice and the minister of national education;
- h) authorizes the assessment centers for professional competences acquired in non-formal and informal contexts and keeps the national register of professional competence assessment centers;
- i) promotes social dialogue and supports the activity of the sectoral committees.”

[....]

11. At article I, after point 20 a new point shall be introduced, no. 21, as follows:

„21. In the annex, after point 47 shall be introduced a new one, no. 471, as follows: «471. The qualification standard represents the description of the requirements in terms of learning results necessary for carrying out a certain activity related to one or several jobs, from a unit group»”

Considering all of the above, it results the need to correlate the requirements of the labour market with the education offer through the qualifications offered by the education system based on learning outcomes.

In this respect we shall consider the definitions agreed at European level in the approaches of the educational public policies regarding learning outcomes.



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CHAPTER 1. TAXONOMY

Taxonomies play a very important role in organizing information. Practically, taxonomy allows for the classification and systematic organization of information into a hierarchical, arborescent manner, from general to specific by logical breakdown. Thus, by using nodes and sub-nodes, it is possible to detail successively the subunits within one unit, the understanding is facilitated from complex to simple and vice versa. The terms used are simple, clear and direct.

Thus, a taxonomy means that each element situated on a higher level is made up of the elements from the lower levels. For instance, in Bloom's taxonomy (regarding the educational learning objectives), *understand* needs *knowledge*, *apply* needs *understand and knowledge*, and so on.

This type of approaches, which allow for the classification and systematic organization of complex realities, are used at international level, having an essential role in comparing the status of facts between different countries, in the statistical analysis of the realities of different countries. From time to time, these classifications are updated, so that the evolution or the new developments be captured for the respective field.

Taxonomies exist and are used in any activity field. We will show below the main taxonomic classifications in education and occupational fields, necessary for the purpose of this guide.

1.1. *Example 1: NACE*

“NACE is the acronym used to designate the national statistical classification of the economical activities in Romania. This classification/ taxonomy was developed in order to allow grouping based on homogeneity criteria of various “statistical units”, such a, a plant or a group of plants which constitute an economic entity, an enterprise. The classification ensures the base for preparing a wide range of statistical data (production, production factors, creation of capital and financial transactions) of these units” (*The National Statistics Institute – INS, Classification of national economic activities – NACE rev 2 of 20.04.2007*)

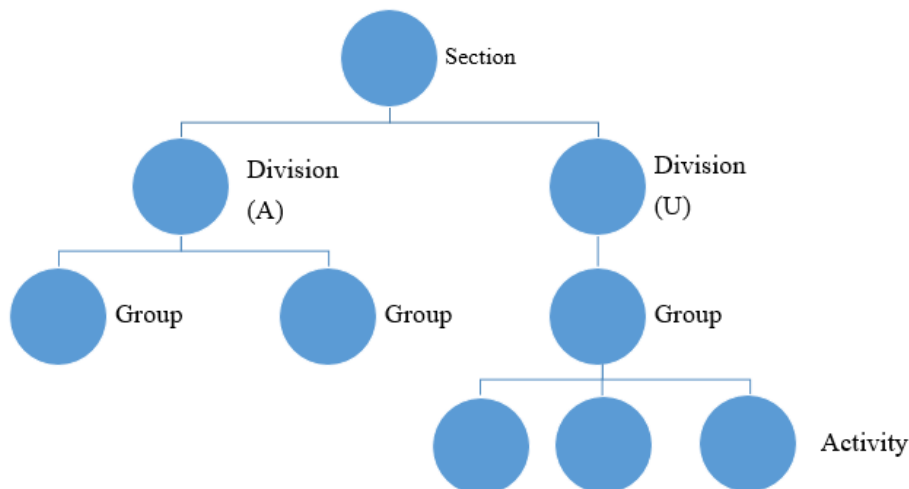
NACE (National Classification of Economic Activities) is a classification with 4 digits which ensures the framework for collecting and offering a large range of statistical data with respect to the economic activities from different sectors, being used in the European Union and worldwide in general. The first version was created in 1970. Currently the revised version 2 is used, in force since 2008.

NACE (see Figure 2) is organized by level as follows: sections (from A to U), divisions (2 digits) and groups (3 digits), the basic unit of the classification being the economic activity (4 digits).

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Figure 2. Graphic representation of NACE rev. 2



1.2. Example 2: ISCO

ISCO (International Standard Classification of Occupations) is a **classification** created by the International Labour Organization (ILO). It is used for organizing **occupations** by sets of groups clearly defined in accordance with the common tasks and responsibilities related to the respective occupations.

“The International Standard Classification of Occupations 2008 (ISCO-08) provides a system for classifying and aggregating occupational information obtained by means of statistical censuses and surveys, as well as from administrative records. [...]

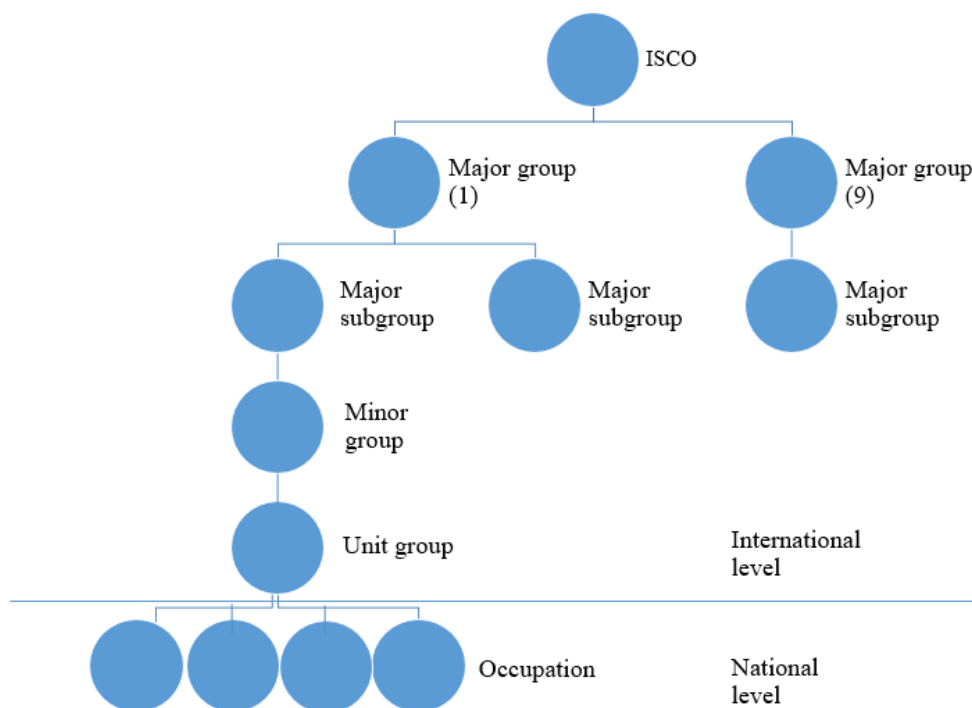
ISCO-08 is a four-level hierarchically structured classification that allows all jobs in the world to be classified into 436 unit groups. These groups form the most detailed level of the classification structure and are aggregated into 130 minor groups, 43 sub-major groups and 10 major groups, based on their similarity in terms of the skill level and skill specialization required for the jobs. This allows the production of relatively detailed internationally comparable data as well as summary information for only 10 groups at the highest level of aggregation.” (ILO, ISCO-08, Part I, INTRODUCTORY AND METHODOLOGICAL NOTES)

Similar to the previous example, ISCO (see Figure 3) is an arborescent hierarchical structure: major groups (1 digit), sub-major groups (2 digits), minor groups (3 digits) and unit groups (4 digits). The basic unit in this classification is, of course, the occupation (6 digits), which is described in terms of tasks and duties. ISCO contains short descriptions for each group, either



major group, sub-major group, minor group or unit group, providing thus common information about the occupations from the respective group.

Figure 3. Graphic representation of ISCO – 08



In Romania ISCO and the Romanian Classification of Occupations (COR) were correlated, so that the systematic organization of COR was referenced to ISCO up to unit group level. This means that the classification is structured in line with the ISCO standards up to unit group level, the flexibility of the national systems, including the Romanian one, being found at the level of occupation.

1.3. Example 3: ISCED

ISCED (International Standard Classification of Education) was developed by UNESCO in order to facilitate the comparison of statistics and national indicators regarding education based on methods and definitions agreed at international level. The framework is



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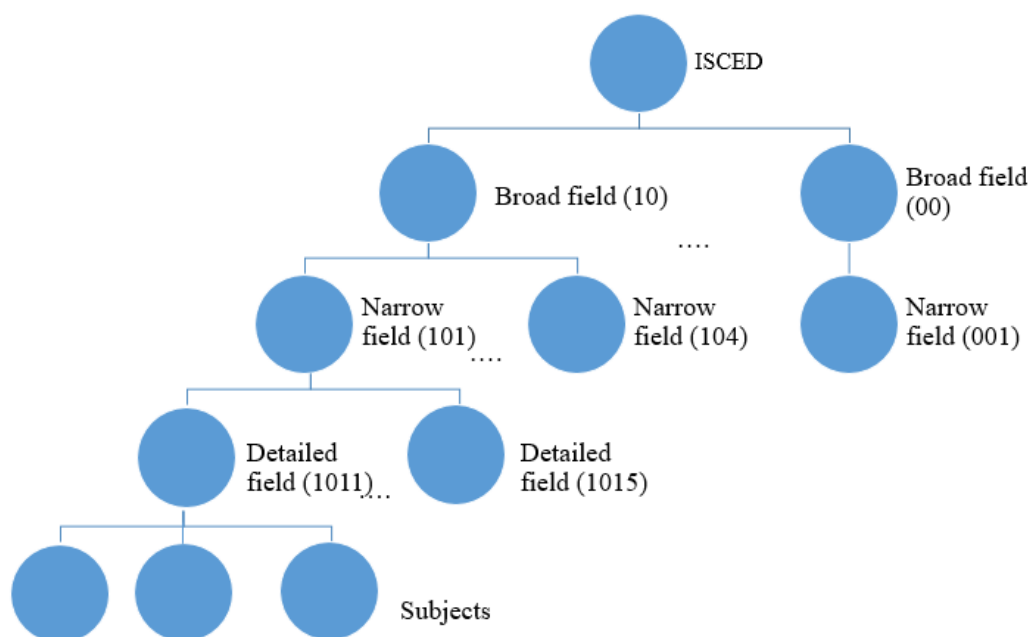
occasionally updated in order to better capture new developments in education systems worldwide. The latest update was performed in 2013.

ISCED-F 2013 is a classification of the fields of education accompanying ISCED 2011. It is implemented in the correlation of the statistical data at EU level since 2016. ISCED 2013 comprises 11 broad fields (2 digits), 29 narrow fields (3 digits) and approx. 80 detailed fields (4 digits), plus the specialized programmes. Specialized programmes are set at national level.

ISCED 2011, which is accompanied by ISCED-F 2013, is both a classification of the national programmes and a classification of the level of education acquired in terms of qualification resulted from the formal education programmes.

The ISCED detailed fields (see Figure 4) are meant mainly to be used for the higher education level, as well as for the vocational education and training programmes and for the related qualifications for the secondary and post secondary education level.

Figure 4. Graphic representation of ISCED



Presently ISCED is not translated into the organization of the Romanian education system, such operation being of interest mainly for the tertiary education and the continuous education and training sector.



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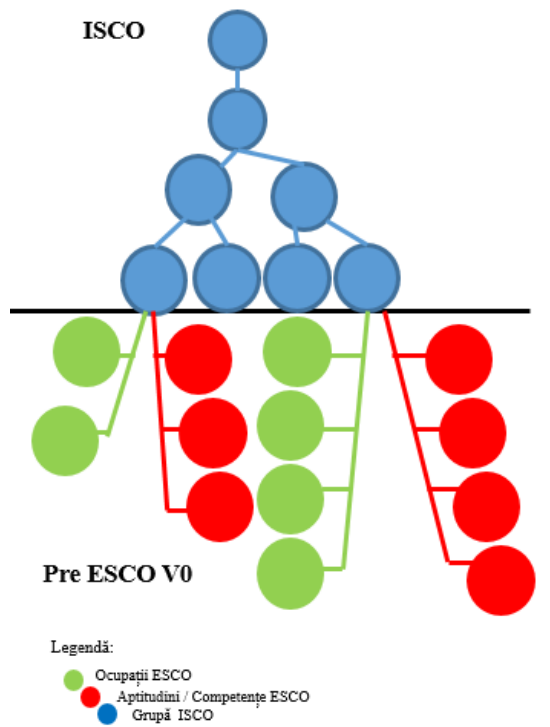
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1.4. Example 4: ESCO

ESCO (European Classification of Skills, Competences, Qualifications and Occupations) identifies and classifies skills, competences, qualifications and occupations relevant for the labour market in EU and for vocational education and training. In developing ESCO the international classifications were taken into account, as well as ISCO-08 and ISCED. This classification is meant to support Strategy Europe 2020 and the New Skills Agenda for Europe.

Through participation at European level of sectoral committees organized in accordance with NACE rev 2 groups, ESCO sets the competences/ general skills recognized at European level for the occupations included in ISCO, using the template shown in Figure 5 below.

Figure 5. Graphic representation of ESCO



An example for ISCO - 08 is as follows:

Level 1 ISCO (Major Group) – Professionals (ISCO – 2);

Level 2 ISCO (Sub-major group) – Legal, social and cultural professionals (ISCO – 26);

Level 3 ISCO (Minor group) – Social and religious professionals (ISCO – 263);

Level 4 ISCO (Unit group) – Philosophers, historians and political scientists (Cod ISCO – 2633)

For level 5, the occupations from the unit group, there are identified skills/competences in ESCO.

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CHAPTER 2. LEARNING OUTCOMES VS COMPETENCES

2.1. Overview

After presenting the international and national motivation/necessity for this guide, the definitions and the writing method of international standards (see Legal Basis Section, points A and B), we have a few words about the big approach change of the relation between *labour market and education and training* (further referred to as *education*).

It is obvious that in the past the teacher had the authority in the field and it was difficult for someone to tell the teacher how to deliver his/her lessons. In those times an invention or a scientific discovery came about once every ten years and the production and technology were of mechanical-agricultural type, meaning with little variations over time. Everything happened for long periods of time (years).

Today, everything is dynamic and mobile and the information doubles worldwide in a few years, practically nobody can keep up with the internet and its information. What a future teacher learns today will change tomorrow, especially in the technical and information sector. Technology and production have a modernization speed which is bewildering for other times, everything happens very fast and one barely gets a product out on the market before the product becomes obsolete.

Around the years 2000, in literature, including Bologna approach, it was talk about the *skills* acquired by the learner in school, which shall be needed for the professional life and beyond. Today, things are changing and we are talking about two concepts: *learning outcomes* and *skills/competences*¹.

But what do they mean and why were they necessary?

To make things even more complicated, both are defined, in the new European documents (New Skills Agenda 2020), in terms of knowledge, abilities, autonomy and responsibility and therefore the natural question arises: what is the difference?

The answer comes from understanding that we have two markets, the *Labour market* and the *Education market*, and both are defining in a similar manner the concepts they employ, even though they want to express different things; moreover there are ways of expression similar to the terms introduced in 2000 and, as we are human, it is often difficult to understand a change on the market, which alters our way of thinking. This is the period defined by the word *change*, but in the sense of *improvement*.

¹ For the purpose of this guide, the terms “*skills*” and “*competences*” are considered synonyms in translating the Romanian “*competențe*”



2.2. Skills – what the labour market asks for

Thus, the concept of *skills/competences* remained to be used on the *labour market*, respectively the employers request having the necessary *competences* for the job described in the job description sheet by tasks, duties, responsibilities and autonomy. In other words, the employers ask for *skills*, and quite often they are not interested in the way the employee obtained such skills, he must have them. At the same time, the employers don't care if the employee has 100 skills, what matters is that he has the 25 ones needed for the job X. At another job, other 25 skills shall be required.

The document talking about the skills required for an occupation is the occupational standard. It describes the skills and competences of an occupation starting with the tasks and duties of the job. It leads to the idea of a professions/vocational qualification offering the skills obtained in formal, informal and non-formal contexts.

This standard is the result of the representatives of the labour market, employers, trade unions, professional associations etc. In other words, it is a standard for the labour market which says what the market requests or needs. Education has no direct participation in developing such standards. For the labour market, the person having these skills listed in the occupational standard is qualified for the position occupied. The rest of the skills, a person may have obtained from school or experience, do not interest directly the employer unless they are not related to the vacant position offered.

2.3. Learning outcomes

Learning outcomes is a term that was introduced later, when school realized that it cannot cover all the skills demanded by the labour market and felt the need to separate itself and find a term to define what a graduate knows after completing a study program, and he was evaluated, certified and “left” on the labour market. It was deemed necessary to define something to support the future employer and then it was established that this term defines what the graduate can actually do and can prove, after certifying the qualification (the theoretical knowledge not being of interest for the labour market).

As we have seen, legislation created the obligation for school to “produce” graduates who can access occupations and can earn an income which can lead to their personal and professional development. In other words, we are at a negotiation table specific for the market economy, at which one party asks for *skills* and the other offers *learning outcomes*.

These *learning outcomes* of course have behind them the entire education process made up of study programmes/qualification standards, fields, levels of qualifications, modules/disciplines, credits, theory/ practice and quality assurance, based on them.

Assessment of these learning outcomes and their promotion by certification lead to the idea of qualification from the point of view of education.



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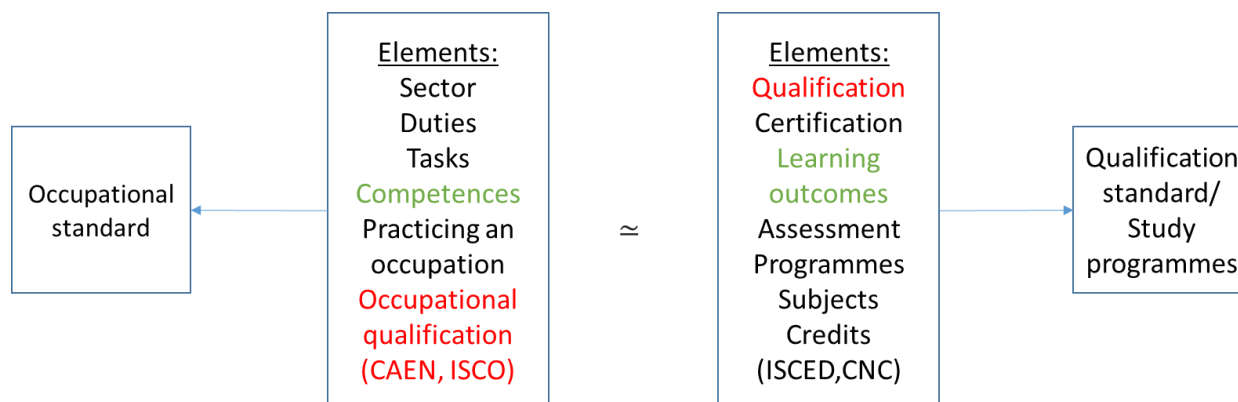


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The qualifications standards/study programmes are for education and training the equivalent of the occupational standards for the labour market.

The two must meet upon employment (see Figure 6), so that what the employer asks by the occupational standard correspond with what the graduate has acquired after the training provided in accordance with the qualifications standards/ study programmes and with the obtained learning outcomes.

Figure 6: Occupational vs. educational qualification
Links between certifications and qualifications



2.4. Labour market vs. Education market

Each “market” has its own standard, hence the current conflicts between the representative institutions. As the labour market talks about tasks, duties and competences, the education market talks about subjects, education fields, credits and learning outcomes.

The big problem today which, as we have seen, we are criticized for as a country, is the mismatch between the demand for specific competences and the educational offer of learning outcomes, and thus the question: *for the same occupation, are the competences required by the employers similar to the learning outcomes offered by the education and training institutions?* (see Figure 6) If the answer is YES, then there is not more mismatch.

We can say that you can graduate from school with grade 10, but, if what you learned is not needed by anybody upon employment, you shall be on the outside and you may get a job as underqualified worker (there are actual examples). This is why learning outcomes are not written by teachers alone, but together with the representatives of the labour market from the respective



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sector. Only by working together we can avoid criticism in the end and dissatisfactions such as: school is no good/your graduates are unprepared etc.

This is in fact the big change, the teacher no longer does what he thinks is best, but what is agreed with the employers. The teacher must now listen to his former student, now on the labour market.

This means work, time, modesty, understanding, negotiation, forecast, organization and coordination and perhaps a new profile for the vocational school teacher or the university professor. This collaboration for the benefit of the student is not easy, it must be consistent in order to keep up with the technological changes.

Practically we can talk about two qualifications: one recognized, given by school and one informal, requested by the job/occupation (see Figure 6). The purpose of this guide is to see how we can go through the stages of transition from work to education (writing learning outcomes) and vice versa (obtaining a qualification and employment), all in the spirit of the present times, putting first the interests of the student and society.



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CHAPTER 3. THE NEW VOCATIONAL EDUCATION AND TRAINING SYSTEM

3.1. The new proposed system

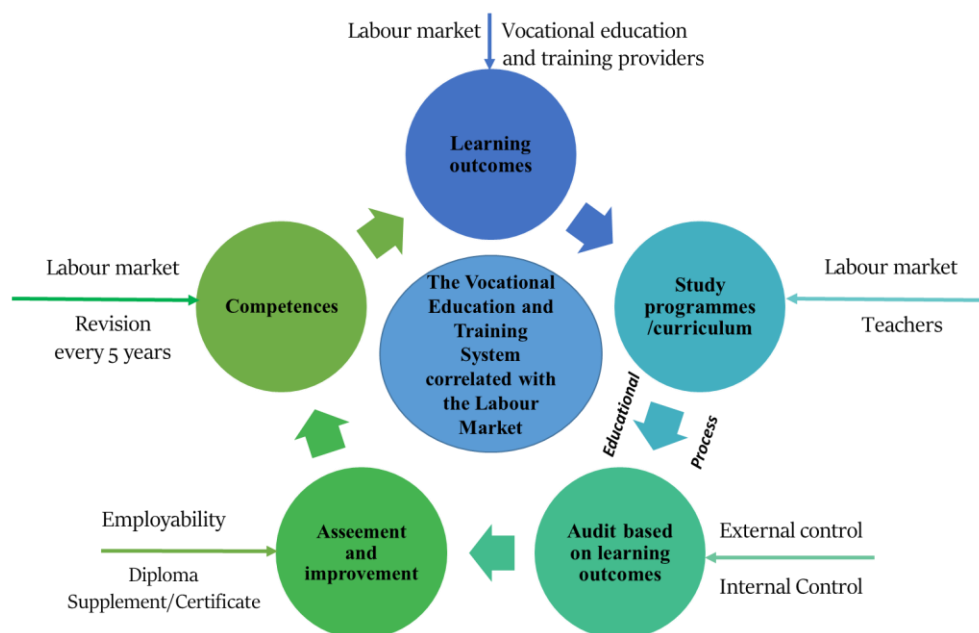
Starting with the aspects presented above, we come to understand that we are talking today about a new education and training system which can be correlated with the requirements of the labour market.

Thus, we are showing in Figure 7 this new system, developed in 5 stages.

Stage 1 starts with defining the competences, set by the occupational standards. These standards are recommended for revision every 5 years the latest, it is possible though that in the future the interval to be reduced, judging by the dynamic of the market.

The second stage means writing the learning outcomes by the two interested parties: the representatives of the labour market and those of the accredited education and training providers.

Figure 7: The vocational education and training system correlated with the labour market for reducing the gap between the labour market demand and the educational offer



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In the third stage the study programmes or the qualification standards are elaborated by the same team that wrote the learning outcomes. Thus the curriculum is born and, based on it, the entire educational process as we know it takes place with the note that it is advisable that any time possible to have specialists from the production sector to deliver some of the classes, especially the practical training ones. The curriculum/ standard must include the evaluation of learning outcomes and the grading method.

The educational process is audited internally and externally for quality assurance, this is the forth stage.

Quality assurance: verifying the compliance with the provisions of the qualification standard/ study programme.

First there is the standard or the education programme and then the quality assurance; if the standard is bad, it does not matter if the quality is good!

Success in education means modern standards/programmes in terms of content, which are delivered at a compliant quality and assessed based on learning outcomes.

The last stage of the system is the self-assessment in view of its improvement, respectively of the competences and therefore of what follows next: learning outcomes/ qualification standard etc, by knowing the opinion of employers and graduates.

3.2. Consequences of the new system

In order for this system to work, here are listed below several observations resulted from the aspects presented so far:

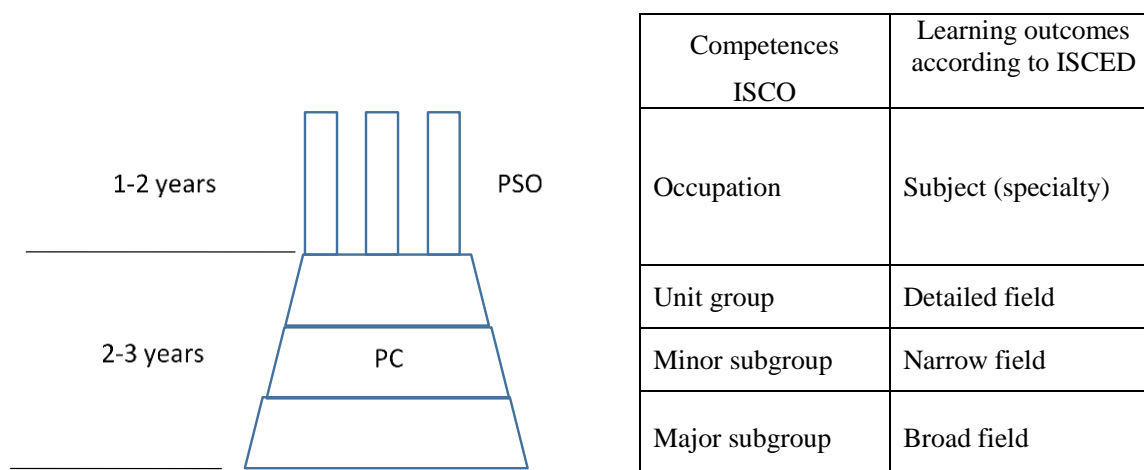
- The tasks and duties for the major groups, the minor groups and the unit groups are standardized at international level;
- To these are associated the standardized competences, which must be translated into learning outcomes, then into study programmes/ the qualification standard;
- These should not depend on the country;
- Most of these competences are found today in ESCO (European Classification of Skills, Competences, Qualifications and Occupations);
- Based on them the corresponding learning outcomes can be set, which in turn become standard as well;
- The related programmes can constitute a **framework programme (Rom. PC)**—irrespective of how many national occupations we may have, they shall comprise a specific framework programme recognized at international level – updated with ISCO at every 5 years (the similarities between the countries should reach 100%);

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- These framework programmes should be the responsibility of the empowered institutions at national level for its elaboration, for instance, for higher education: ANC and ARACIS, together with the representatives of the labour market;
- To the above listed aspects, in order to have a degree programme/qualification standard for an occupation, the education and training plan/ curriculum should be added related to the learning outcomes deriving from the competences specific for the occupation or **the occupation specific plan (Rom. PSO)**;
- These should be elaborated at national level by cooperation between the representatives of the education providers and those of the labour market for the respective sector and are unique at country level;
- The study programme/ qualification standard thus means: framework programme + occupation specific plan (PC + PSO);
- Which means we shall have: learning outcomes (at unit group level) + specific learning outcomes at occupation level, which are enriched in time along with Romanian Classification of Occupations (COR);
- The new proposed system (see Figure 8) shall facilitate: former studies recognition and equation, recognition of informal learning, continuous training and multiple qualifications;
- THE CONNECTION WITH THE NATIONAL AND INTERNATIONAL LABOUR MARKET WOULD BE OBVIOUS and the mismatches pointed out in the country recommendations would disappear.

Figure 8. Creating a study programme





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This would mean, for instance, for the tertiary education graduates who want to turn to a different carrier path, considering the market trends, to be able to complete afterwards the respective to PSO study programmes, thus obtaining the necessary competences for another occupation from the same unit group.



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CHAPTER 4. THE PROCESS OF WRITING LEARNING OUTCOMES OR FROM TASKS TO LEARNING OUTCOMES

The process of writing learning outcomes (LO) starts with the very existence of an occupation in COR and the desire to create a study programme/qualification standard leading to such occupation, by correlating the requirement of competence with the learning outcomes.

4.1. Stage 1. – The occupation

If there is an occupation, there should also exist, as we have shown, the related occupational standard as well as a COR code of **six digits**.

The occupation has thus assigned (i) a COR xxxxxx code of six digits and (ii) the tasks and duties of the person practicing it, concisely expressed in terms of competences which imply: necessary knowledge, skills, responsibility of the employee as well as its autonomy in the act of managing its own activity or that of others.

The COR number means:

- x – major group: it gives the level of qualification, eg. 2 – tertiary education; *Professionals*;
- xx – submajor group: it comprises the occupations which have in common skills and tasks expressed by skills/competences. They belong to a broad education field according to ISCED, eg. 21 *Science and Engineering Professionals*; 22 *Health Professionals*;
- xxx – minor group: it comprises the occupations which have more tasks and skills/competences in common. They belong to a narrow education field according to ISCED, eg. 214 *Engineers*; 263 *Social and Religious Professionals*;
- xxxx – the unit group: has tasks and duties in common for all occupations expressed by skills/competences. They belong to a detailed education field according to ISCED, eg. 2144 *Mechanical Engineers*; 2631 *Economists*; This is where the correspondence between the national framework and the international framework ends.
- xxxxx – represents the occupation from a major group. It is characterized by knowledge and specific abilities, respective specific skills/ competences. It is connected to the special programmes field of ISCED, eg. 214439 *test pilot engineer*. Specificity makes each occupation unique from the point of view of the qualification.

These six digits are very important for the teams who shall write the learning outcomes, as the **first digit** shall give information about the skills level indicated by ISCO, corresponding to the educational level indicated by ISCED and the qualification level from ESCO/NQF (eg. Table 1).

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When writing learning outcomes we should constantly verify if the occupation is listed in ISCO and if it is, to have competences close to those indicated in ESCO so that the recognition of the qualification be easy in the future for the graduate. ESCO becomes a European reference for competences, to be taken into consideration when writing the occupational standards and not only. We go back to COR.

From major group to unit group the tasks and duties are listed and belong to the international system, respectively ISCO-08. This means that it is not up to each country or the qualification manner to define them, they are international framework skills/ competences for each occupation. They are supplemented by the specific skills/ competences as a result of local specialization (according to GEO 129/2000).

Specialization programmes can be both bachelor and master or doctorate type, or post-tertiary, provided they comply with the occupation's level of qualification.

Currently in Romania there we do not have a hierarchy of the qualification titles for levels 6, 7 and 8.

As we have shown, to each of this major group it corresponds a set of tasks and duties recognized at international level or framework tasks and duties. Obviously, they have corresponding framework competences. These competences should have corresponding standard learning outcomes, similarly with all the countries where ISCO is operational, creating a reference framework.

Thus it results that the framework programme (Rom. PC) we were talking about before should be similar from one country to another and that whether you are a mechanical engineer or a turner, you should have study modules in common with the other turners or mechanical engineers in Europe. There should not be any major differences here, we should rather line up to the advanced European standards. This is how the mobility of the student can be ensured. There are countries that have modern occupational standards for all ISCO occupations as well as for their own national framework of occupations. We don't have to reinvent the wheel.



Table 1. CORREALTING ISCO 08 GROUPS TO THE ISCED LEVELS OF EDUCATION AND THE QUALIFICATION LEVELS IN ACCORDANCE WITH THE INTERNATIONAL STANDARDS

Major group per ISCO 08 / COR	Skills and competence level - ISCO 08	ISCED 1997	ISCED 2011	Level of education	EQF level	NQF level
1 Managers	3+4					
2. Professionals	4	6 – second stage of tertiary education (leading to advanced research qualification)	8	tertiary	7/8	7/8
		5 – first stage of tertiary education – 1st degree (medium duration)	6/7	tertiary	6/7	6/7
3 Technicians and Associate Professionals	3	5 –first stage of tertiary education (short or medium duration)	5/6	tertiary	5s/6 5s/p	5s/6
4. clerical support workers	2-3	4. post-secondary, non-tertiary education	4	> 12 grade	4/5 p	4/5 p
		3. upper secondary level of education	3	grades 10-12	3	3
		2. lower secondary level of education	2	grades 8-10	2	2
5. Services and Sales workers	2-3	4. post-secondary, non-tertiary education	4	grades 12	4/5	4/5
		3. upper secondary level of education	3	grades 10-12	3	3
		2. lower secondary level of education	2	grades 8-10	2	2
6. Skilled in agricultural,	2	4. post-secondary, non-tertiary education	4	grade 12	4/5	4/5



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Major group per ISCO 08 / COR	Skills and competence level - ISCO 08	ISCED 1997	ISCED 2011	Level of education	EQF level	NQF level
forestry and fishery workers		3. upper secondary level of education	3	grades 10-12	3	3
		2. lower secondary level of education	2	grades 8-10	2	2
7. Craft and Related Trades workers	2	4. post-secondary, non-tertiary education	4	grade 12	4/5	4/5
		3. upper secondary level of education	3	grades 10-12	3	3
		2. lower secondary level of education	2	grades 8-10	2	2
8. Plant and Machine Operators and Assemblers	2	4. post-secondary, non-tertiary education	4	grade 12	4/5	4/5
		3. upper secondary level of education	3	grades 10-12	3	3
		2. lower secondary level of education	2	grades 8-10	2	2
9. Elementary occupations	1	1. primary level of education		8 grades	1	1
				Primary education (4 or 6 grades)		
0 Armed Forces Occupations						

The problem resides with the occupation specific skills and the transversal skill, as the case may be.

We have 97 unit groups in COR to which there should be 97 corresponding framework programmes.

If they do not exist, the programme should be created in accordance with the aspects mentioned herein, that is, together with the representatives of the labour market and, more precisely, of the economic activity from the NACE field (the unit group belongs to and implicitly the occupation).

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These framework programmes should be written with the coordination of ANC, the related Sectoral Committee and a quality assurance institution, such as ARACIS for the higher education. They give stability and recognition on the labour market.

Table 2 shows a correlation between the types of training programmes, the education fields, the COR code for the occupation and the resulted competences. It can be observed that, as there are basic, fundamental, field/domain, specialized and occupation competences, in other words professional, there also are corresponding learning outcomes.

Table 2: Correspondence between: Education programmes/ classifications – COR – Labour market - Competences

The Ministry of National Education		COR No. of digits	The Ministry of Labour and Social Justice	
Types of education programmes	Labour market		Labour market – COR codes	Competences
Counselling	Economic macrodomains - 21 NACE	1	Major group	General /Key
Information - development	Group of fields - 9 - ISCED/6 COR	2	Major sub-group	Basic -B
Professional Initiation/ reconversion	Field of study -25- ISCED/27 COR	3	Minor group	Core - F
Bachelor/vocational	Profession in tertiary education level –80- ISCED/97 COR	4	Unit group	Field -D
Vocational	Specialization tertiary/vocational – 50%/50% - 4400	6	Occupation = sum of B+F+D+S	Specific - S -
Post tertiary/ specializing/ qualification/ retraining	Knowledge, abilities, skills	-	Skills/ Competences	Professional/ Personal/ Occupational – O



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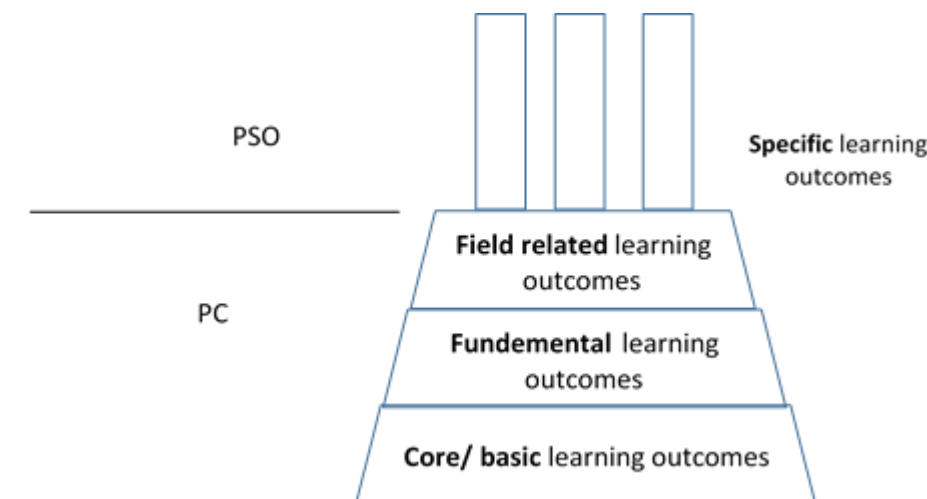
The post tertiary programmes represent specializing programmes for occupations from the same unit group. These start with gaining skills and offer learning outcomes, respectively related credits, for the occupations from the unit group the background of the student corresponds to.

By summing up the post-tertiary programmes, completed at different moments in time and for various durations, which lead to accumulating different skills, the recognition of credits, a diploma or a qualification can be obtained. It is an alternative for the adults who wish to obtain a qualification but cannot do so because, for instance, they have a job, to complete an entire bachelor/master programme in order to obtain the respective qualification.

Thus, the qualification is obtained after completing a bachelor (master) programme, for an occupation from the unit group. In order to go to another occupation from the same unit group, the specific skills can be obtained by graduating the specializing post tertiary courses (see Figure 9).



Figure 9. The structure of study programmes



- | | | |
|------------------------|---|--|
| - bachelor: | <div style="display: inline-block; vertical-align: middle; font-size: 3em; margin-right: 10px;">{</div> <div style="display: inline-block; vertical-align: middle;"> <p>PC</p> <p>PC + 1, 2, PSO</p> </div> | <p>- general training in the field</p> <p>- obtaining also specific qualification, 1/ 2 occupations</p> |
| - master: | 2/ 3/ 4, PSO | - obtaining qualification for 2/ 3/ 4 occupations |
| - tertiary non-degree: | 0,25/1, PSO | - obtaining partial qualifications related to a series of learning outcomes, which lead to some competences corresponding to an occupation |

4.2. Stage 2. –NACE field

At occupation level the NACE field the occupation belongs to is identified and the specific competences as well, if there is a new occupational standard (during the last 5 years), if there is not, the standard should be developed or revised.



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In order to be operational on the labour market, any standard/ study programme must be linked to the NACE activity. This activity also indicates the social partners who shall establish the learning outcomes. The specialists in the respective activity field must be contacted when writing learning outcomes, and not the specialists in the sector of activity, since it is too broad.

4.3. Stage 3. – ISCED

Correlating the occupation's code with the ISCED narrow field, using the name of unit group form COR. Table 3 below shows an example for the major sub-groups of major group 2 *Professionals* (tertiary education level) (see also Annex 11). Similarly the process should be conducted for the rest of COR major groups.

The exact correlation between ISCED and ISCO/COR shall be executed through a project developed by the Ministry of National Education, the table below is only a rough guide.

We can notice a strong connection between international standards and the correspondence education – labour market which should be implemented in Romania as well. It is not acceptable to complete your education in one ISCED narrow field and then practice occupations connected to another, it is unreliability, amateurism and incompetence.

Table 3: Correlation COR – ISCED

ISCED		COR
Broad field	Narrow field	Unit group
01 Education	011 Education	2310 University and Higher Education Teachers
		2320 Vocational Education Teachers
		2330 Secondary Education Teachers
		2341 Primary School Teachers
		2342 Early Childhood Educators
		2351 Education Methods Specialists
		2352 Special Needs Teachers
		2353 Other Language Teachers
		2354 Other Music Teachers
		2355 Other Arts Teachers
		2356 Information Technology Trainers
		2359 Teaching Professionals Not Elsewhere Classified
02 Arts and humanities	021 Arts	2163 Product and Garment Designers
		2651 Visual Artists
		2652 Musicians, Singers and Composers

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ISCED		COR
Broad field	Narrow field	Unit group
		2653 Dancers and Choreographers
		2654 Film, Stage and Related Directors and Producers
		2655 Actors
		2659 Creative and Performing Artists Not Elsewhere Classified
	022 Humanities (except languages)	2633 Philosophers, Historians and Political Scientists
		2636 Religious Professionals
	023 Languages	2641 Authors and Related Writers
		2643 Translators, Interpreters and Other Linguists
03 Social sciences, journalism and information	031 Social and behavioural sciences	2631 Economists
		2632 Sociologists, Anthropologists and Related Professionals
		2634 Psychologists
	032 Journalism and information	2621 Archivists and Curators
		2622 Librarians and Related Information Professionals
		2642 Journalists
04 Business, administration and law	041 Business, and administration	2656 Announcers on Radio, Television and Other Media
		2411 Accountants
		2412 Financial and Investment Advisers
		2413 Financial Analysts
		2421 Management and Organization Analysts
		2422 Policy Administration Professionals
		2423 Personnel and Careers Professionals
		2424 Training and Staff Development Professionals
		2429 Administration Professionals not elsewhere classified
		2431 Advertising and Marketing Professionals
		2432 Public Relations Professionals
		2433 Technical and Medical Sales Professionals (excluding ICT)
		2434 Information and Communications Technology Sales Professionals
	042 Law	2611 Lawyers
		2612 Judges
		2619 Legal Professionals Not Elsewhere Classified

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ISCED		COR
Broad field	Narrow field	Unit group
05 Natural sciences, mathematics and statistics	051 Biological and related sciences	2131 Biologists, Botanists, Zoologists and Related Professionals
	052 Environment	2133 Environmental Protection Professionals
	053 Physical sciences	2111 Physicists and Astronomers
		2112 Meteorologists
		2113 Chemists
		2114 Geologists and Geophysicists
	054 Mathematics and statistics	2120 Mathematicians, Actuaries and Statisticians
06 Information and Communication Technologies (ICTs)	061 Information and Communication Technologies (ICTs)	2166 Graphic and Multimedia Designers
		2511 Systems Analysts
		2512 Software Developers
		2513 Web and Multimedia Developers
		2514 Applications Programmers
		2519 Software and Applications Developers and Analysts Not Elsewhere Classified
		2521 Database Designers and Administrators
		2522 Systems Administrators
		2523 Computer Network Professionals
		2529 Database and Network Professionals Not Elsewhere Classified
07 Engineering, manufacturing and construction	071 Engineering and engineering trades	2141 Industrial and Production Engineers
		2143 Environmental Engineers
		2144 Mechanical Engineers
		2145 Chemical Engineers
		2149 Engineering Professionals Not Elsewhere Classified
		2151 Electrical Engineers
		2152 Electronics Engineers
		2153 Telecommunications Engineers
	072 Manufacturing and processes	2146 Mining Engineers, Metallurgists and Related Professionals
	073 Architecture and construction	2142 Civil Engineers
		2161 Building Architects
		2162 Landscape Architects
		2164 Town and Traffic Planners

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ISCED		COR
Broad field	Narrow field	Unit group
		2165 Cartographers and Surveyors
08 Agriculture, forestry, fisheries and veterinary	081 Agriculture	2132 Farming, Forestry and Fisheries Advisers
	082 Forestry	
	084 Veterinary	2250 Veterinarians
09 Health and welfare	091 Health	2211 Generalist Medical Practitioners
		2212 Specialist Medical Practitioners
		2221 Nursing Professionals
		2222 Midwifery Professionals
		2230 Traditional and Complementary Medicine Professionals
		2240 Paramedical Practitioners
		2261 Dentists
		2262 Pharmacists
		2264 Physiotherapists
		2265 Dieticians and Nutritionists
		2266 Audiologists and Speech Therapists
		2267 Optometrists and Ophthalmic Opticians
		2269 Health Professionals Not Elsewhere Classified
	092 Welfare	2635 Social Work and Counselling Professionals
10 Services	102 Hygiene and occupational health services	2263 Environmental and Occupational Health and Hygiene Professionals



4.4. Stage 4. – Learning outcomes (LO)

4.4.a Context

Writing Learning outcomes should be based on: (i) the NACE field of activity; (ii) the framework competences (PC) and the specific/ occupational competences (PSO) from the occupational standard (which are based on the tasks and duties of the occupation); (iii) ISCO fields; (iv) the ISCED field of education; (v) THE NATIONAL EDUCATION LEVEL (for the correspondence ISCO-ISCED-EQF please see Table 1) and (vi) AND THE QUALIFICATION LEVEL (see Annex 1).

Each competence is exemplified/ translated into 6-10 learning outcomes (see Section Legal bases, point A5 – ECTS). For instance, competence 1 can be describes by 4 learning outcomes (LO):

- ✓ LO₁ - The student knows: 1,2,3 ...
- ✓ LO₂ - The student is able to do: 1,2,3 ...
- ✓ LO₃ - The student is responsible for: 1,2 ...
- ✓ LO₄ - The student has an attitude of: 1 ...

In order to write them as accurate as possible, there should be formed a partnership between the representatives of the labour market, with experience in education, if possible, good professionals in the economic respective activity field, respectively the unit group and professionals in education sector, from the same field, with practical experience as well. If this in not possible, the dialogue will be very difficult. The Group shall have to choose a moderator who knows the procedure and what the final result should be.

4.4.b Writing learning outcomes

According to the recommendations made by CEDEFOP (2017), the discussions regarding writing learning outcomes led to several technical and concept requirements to be followed:

These statements of leaning outcomes:

- must be short (+/- 1000 characters) and understandable
- must use a pre-defined structure and syntax
- must refer to agreed but flexible learning domains
- must be supported by a standardised terminology, including lists of action verbs
- must be supported by guidelines



Table 4 below shows an example of the basic structure of learning outcomes.

Table 4. The basic structure of learning outcomes

The basic structure of learning outcomes statements			
It should address <u>the learner</u>	It should use an <u>action verb</u> to signal the level of learning expected	It should indicate <u>the object</u> and <u>scope</u> (the depth and breadth) of the expected learning	It should clarify the occupational and/or social <u>context</u> in which the qualification is relevant
Examples			
The student...	...is expected to present....	...in writing the results of the risk analysisallowing others to follow the process replicate the results.
The learner...	...is expected to distinguish between...	...the environmental effects...	...of cooling gases used in refrigeration systems.

Source: CEDEFOP (2017)

A common format could be as follows:

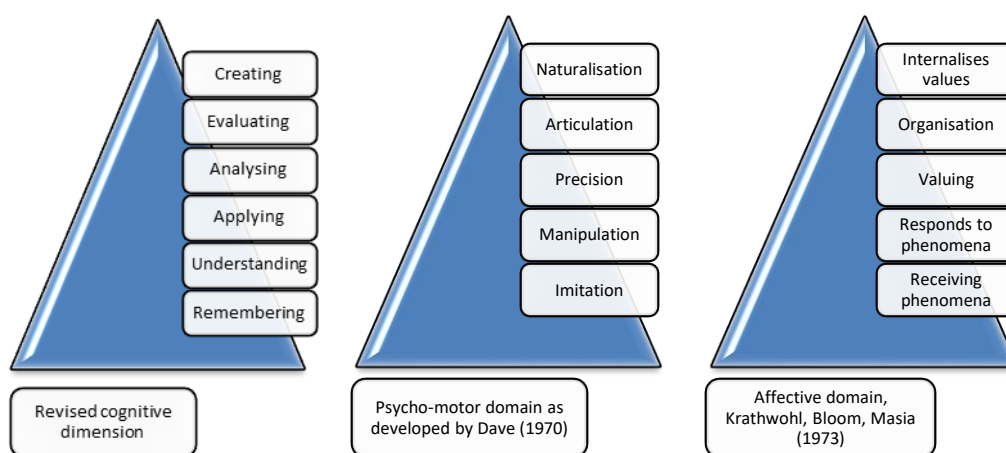
The learning outcomes description should be limited to +/- 1000 <u>characters</u> and be written taking the following elements into consideration			
It should present the qualification from the perspective of <u>the learner</u> and what he/she is expected to know, be able to do and understand	It should use action verbs to signal the level of learning expected, normally with an (explicit or implicit) reference to the levels of the national qualifications framework and/or the EQF	It should indicate the object and scope of the expected learning outcomes. This description should capture the main orientation of the qualification and the depth/breadth of the expected accomplishment. It can, if deemed appropriate, use pre-defined domains as defined by NQFs/EQF	It should clarify the occupational and/or social context in which the qualification operates

Source: CEDEFOP (2017)



4.4.c Action verbs

In writing learning outcomes, Bloom's taxonomic approach (as presented in Figure 10 below), from the cognitive perspective, may constitute a very useful base for expressing learning outcomes.



Sources: Bloom et al. (1956); Dave (1970); Anderson and Krathwohl (2001)

Source: CEDEFOP (2016)

Figure 10. Bloom's taxonomy: cognitive, psycho-motor and affective domains

The choice of phrases and verbs used in describing learning outcomes is to be done with care and attention for every qualification level.

Below we can find several examples of action verbs for each category:

Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analysing	V. Evaluating	VI. Creating
Bloom's Definition	Exhibit memory of previously learned material by recalling facts, terms basic concepts and answers	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving	Solve problems to new situations by applying acquired knowledge, facts,	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to	Present and defend opinions by making judgments about information, validity of ideas or	Compile information together in a different way by combining elements in a new pattern or



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Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analysing	V. Evaluating	VI. Creating
		descriptions and stating main ideas	techniques and rules in a different way	support generalizations	quality of work based on a set of criteria	proposing alternative solutions
Verbs	Choose Define Find - How Label List Match Name Omit Relate Select Show Spell Tell - What - When - Where - Which - Who - Why	Classify Compare Contrast Demonstrate Explain Extend Illustrate Infer Interpret Outline Relate Rephrase Show Summarize Translate	Apply Build Choose Construct Develop Experiment with Identify Interview Make use of Model Organize Plan Select Solve Utilize	Analyze Assume Categorize Classify Compare Conclusion Contrast Discover Dissect Distinguish Divide Examine Function Interference Inspect List - Motive - Relationships Simplify Survey Take part in Test for Theme	Agree Appraise Assess Choose Compare Conclude - Criteria Decide Deduct Defend Determine Disprove Estimate Explain Importance Influence Interpret Judge Justify Mark Measure Opinion Perceive Prioritize Prove Rate Recommend Rule on Select Support Value	Adapt Build Change Choose Combine Compile Compose Construct Create Delete Design Develop Discuss Elaborate Estimate Formulate Happen Imagine Improve Invent Make up Maximize Minimize Modify - Original Originate Plan Predict Propose - Solution Solve Suppose Test - Theory

(Source: Anderson, L.W. & Krathwohl, D.R. (2001). *A taxonomy for learning, teaching and assessing, Abridged edition*, Boston, MA: Allyn and Bacon)

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According to Bloom's taxonomy, it is recommended to use verbs included in categories I-III for learning outcomes related to secondary education level, and for tertiary level the verbs from categories IV-VI.

In order to facilitate the drawing up and translation of Certificate Supplements, for Europass was created a glossary that proposes harmonised multilingual terminology. Projects implemented in several Member States show that it is possible to describe the main competences linked to specific job profiles, using a limited corpus of action verbs, irrespective of the branch or level

The glossary is divided into seven parts, corresponding to major fields of competence:

- Information management;
- Consultancy / assistance;
- Production management (goods and services);
- Management;
- Human resource management and training;
- Marketing and accountancy;
- Research and development

Please find below examples of action verbs which can be used in writing learning outcomes for management information:

Verb	Definition
analyse (information)	to examine in detail in order to discover meaning, essential feature, etc.
collect / gather (data)	to gather together
compare	to examine in order to observe resemblances or differences
compile	to make or compose from other material or sources
create (database)	to cause to come into existence
deal with (dossier)	to take action on
define	to state precisely the meaning of (words, terms, etc)
describe	to give an account or representation of in words
direct	to tell or show (someone) the way to the place
disseminate	to distribute or scatter about; diffuse
draw up (document)	1) to formulate and write out in appropriate form 2) to prepare a draft (legal document)
examine	to look at, inspect, or scrutinise carefully or in detail
exchange (information)	to give or receive (information, ideas, etc.)
explain	to make something comprehensible, esp. by giving a clear and detailed account of the relevant structure, operation, surrounding circumstances, etc
extract	to derive (information) from one source or situation
impart	to communicate (information)
master	to become thoroughly proficient in



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Verb	Definition
report on	to give an account of the results of an investigation
structure	to impart a structure to
study (document)	to look at minutely
synthesise (data)	to combine or cause to combine into a whole
update	to bring up to date

Source: Europass (<https://europass.cedefop.europa.eu/ro/documents/european-skills-passport/certificate-supplement/action-verbs-glossary>)

Each writing learning outcomes team shall study the relevant glossary. Similarly the most appropriate terms shall be found also for the other competences corresponding to different fields. For the competences related to other fields, ESCO should be consulted.

Annex 3-10 include several examples of learning outcomes written for various NACE fields and qualification levels, within the project “National Coordinator for implementation of the European Agenda for Adult Learning” – Contract no. 567464 – EPP-1-2015-1-RO-EPPKA3-AL-AGENDA.

Attention!

Learning outcomes represent what any graduate knows and can validate/ demonstrate after completing a programme/ course/ subject matter. The curriculum is developed based on learning outcomes, including the minimum standards of evaluation for learning outcomes. The capacity of the student to graduate based on the evaluation standards promises the labour market that the student has acquired the learning outcomes and therefore the skills they were based on. We must expect, for instance, that for a tertiary study programme to write hundreds of learning outcomes.



4.5. Stage 5. - Curriculum

The next step is writing the curriculum made up of: subjects, no. of classes, no. of hours of theory/practice/laboratory, the evaluation standard, no. of credits, teachers (in terms of training), the manner of certification for learning outcomes.

The curriculum is advisable to be composed of modules, each module leading to acquiring specific learning outcomes, which shall lead in the future to recognition of qualifications based on learning outcomes, to be enforced after 2020.

Learning outcomes must be practical, applicable, in working conditions as much as possible, to imitate reality of the working environment the graduate shall activate in.

Based on learning outcomes, the curriculum can be monitored and improved to be in compliance with the requirements of the labour market. In this respect, we will show below a table which shall help create such a curriculum in accordance with the issues presented above. The table must be filled in by specialists, the example provided is for the unit group *chemical engineer*, without being deemed final version (Table 5).

Table 5. The relation between COR occupations, learning outcomes and higher education curriculum (example from engineering field)

COR	Competences	Learning outcomes	Subjects	Years of study	Knowledge/skills abilities/responsibilities	Possible occupations
1	2	3	4	5	6	7
Major Group -2	* General (literacy, numeracy, digital) Key - 8 Transversal - 4	What knows any graduate of higher education – demonstrated by passing the Bacalaureat	Curriculum Bacalaureat	High school	According to curriculum	Specialists/ Professionals
Major sub-group	Basic (eg: 21- Science and Engineering Professionals) – What any graduate of this group knows to do	Basic - Can solve simple math problems - Can solve simple physics problems, - Can solve simple chemistry problems,	Basic Mathematics Physics Chemistry ITC	Year I	To be completed	



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COR	Competences	Learning outcomes	Subjects	Years of study	Knowledge/ skills abilities/ responsibilities	Possible occupations
		- Can communicate correctly through the current information systems				
Minor group	Fundamental (Core) (eg: 214 – engineers) what any engineer knows to do	Fundamental Knows all the theorems of thermotechnics and solves simple problems - idem electro, - idem hydro, - knows the materials used in its specialized field - can design with the computation programmes simple work pieces related to its field of activity	Fundamental Thermotechnics, Electrotechnics, Hydrotechnics, Mechanics, Science of Materials, Mechanical drawing	Year II		
Unit group	Field related (eg: Chemistry) – What any chemical engineer knows to do	Field related To be decided Economic and education sectors	Field related Chemists + Economic and tertiary education sectors	Year III		2145 – chemical engineers (general)
Occupation	Occupation specific (eg: design engineer) – What this specialist knows to do	Occupation specific To be decided Economic and education sectors	Occupation specific Specialists from the economic and education sectors	IV-V Master		214503- Design chemical engineer (qualification)

To be done similarly for all ISCO unit groups.

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CHAPTER 5. CONCLUSIONS

With respect to the present vocational education and training system we can no longer talk about education programmes and qualification standards without referring to learning outcomes.

Today learning outcomes define what a graduate actually know and is able to do after completion, assessment and graduating a training module, a subject or hours of practical/theoretical training.

These learning outcomes must be certified and validated in order to lead to a qualification. Learning results become thus part of the certifying process of a qualification.

Therefore they must be reached irrespective of the training context, formal, informal or non-formal, being a common denominator for all forms of education.

If these learning outcomes correspond as accurately as possible to the competences requested by the employers, this means that the education and training process reached one of its targets, preparing the student for the working life.

Just like competences are the last link of the occupational standard, learning outcomes are the last link of the qualification standards or the education programmes, based on which the education and training programmes are elaborated.

Modern education and training programmes start with learning outcomes correlated with the information resulted from COR/ISCO:

- Level of qualification – NQF/EQF (Annex 1 and 2);
- Educational field - ISCED;
- Level of education - ISCED;

And must consider:

- the content which leads to acquiring thereof (it would be advisable to be organized by modules: teaching and assessment packaging for a subject leads to a better accumulation of knowledge, skills and responsibilities taught);
- credits (for homogeneity in the higher education field we recommend a multiple of 5 credits per module/ subject matter, respectively 125-150 hours of theory and practice and individual work; for the non-tertiary levels the number of credits shall be set by the training plan in accordance with the importance of the subject). According to the ECTS 2015 Guide, a credit in tertiary education comprises 25-30 teaching hours and individual study;
- the duration of the studies, if referring to the formal education system;

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- the qualification obtained, corresponding to the occupation(s) the graduate can choose based on the education and training acquired;
- the title granted;
- The NACE field the qualification belongs to in order to avoid confusion in case the same term is used for different fields of activity.

Learning outcomes contribute to quality assurance, are part of quality assurance.

In this respect, we are proposing a template table (see Table 6) to be useful in elaborating the education programmes and the qualification standards which, by its completion together with the stakeholders, shall lead to elaborating programmes and standards based on learning outcomes.

The proposed table includes all the necessary information, from the tasks and duties of the employee for a certain occupation up to the competences, learning outcomes and the vocational education and training programme that created the qualification of the respective employee (Table 7 shows an example for *mechanical engineer*).

Attention!!

Learning outcomes differ from one level of qualification to another, even if the name of the qualification is similar, by what the graduate can do when the level of qualification raises.

For instance, level 3 mathematics (high school) should have different learning outcomes than level 6 mathematics (university). This is where the difference in level should be visible so that no longer be possible for the students to repeat the secondary education knowledge and skills at tertiary level, or, similarly from bachelor to master. The differences exist also between fields, for instance level 6 mathematics for engineers differs from level 6 mathematics for mathematicians and level 6 mathematics for physicists.

Writing learning outcomes is conducted by the specialized commissions, and the qualification levels shall be coordinated by the National Qualification Authority (NQA).

Mixed labour-education commissions should clearly and precisely take into account the qualification level. Thus, the current education programmes will become more simplified at primary and secondary level, which are, as the market says, “too rich” or “too heavy” and shall be developed the one for master level, which are “too deficient”.

Table 7 is created within NQA as a synthesis of the aspects aforementioned and can be used for any qualification corresponding to an occupation listed in the Romanian Classifications of Occupations.

We need learning outcomes which are compelling, serious, clear, simple to understand by the reader, usable in any form of assessment regardless whether it concerns formal, informal or non-formal learning.



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If the 8th grade graduate has to know how to calculate the area of the circle, the volume of the pyramid or the velocity of the car, similarly the engineer has to know how to calculate/ measure the installation X, the production line Y or robot Z. These are the promises the education makes to the labour market and they are correct only if the labour market contributed to the process of writing of learning outcomes.

The education reform is made together, the giver and the taker, it is very easy to criticize if you are not part of the process, learning outcomes are the place where we should shake hands for a better future for both parties.



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Table 6. Template for writing the study programmes/ qualification standards based on learning outcomes and international standards

LABOUR MARKET								REGULATORY			EDUCATION								
NACE fields	Code COR/Group	Tasks and duties ISCO	Skills level (ISCO)	Conditions for access	Completed studies	Occupational competences	Knowledge, skills, autonomy, responsibility	Qualification level CNC	ISCED level	ISCED field	Learning outcomes	Subjects/ Modules	Credits	Year of study	Title	Occupation	NACE field	Comments	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

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Table 7. Writing study programme for mechanical engineer

LABOUR MARKET								REGULATORY			EDUCATION								
NACE fields	Code COR/Group	Tasks and duties ISCO	Skills level (ISCO)	Conditions for access	Graduated studies	Occupational competences	Knowledge, skills, autonomy, responsibility	Qualification level CNC	ISCED level	ISCED field	Learning outcomes	Subjects/ Modules	Credits	Year of study	Title	Occupation	NACE field	Comments	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1)																			
	Major group 2 <i>Professionals (in different fields of activity)</i> Valid for all those who aspire to and graduate tertiary education	Professionals increase the existing stock of knowledge; apply scientific or artistic concepts and theories; teach about the foregoing in a systematic manner; or engage in any combination of these activities. Tasks include: - conducting analysis and research, and developing concepts, theories and operational methods; - advising on or applying existing knowledge related to physical sciences, mathematics, engineering and technology, life sciences, medical and health services, social sciences and humanities; - teaching the theory and practice of one or more disciplines at different educational levels; teaching and educating persons	4	BAC	Upper secondary (high school)	- for theoretical high schools to be considered those from the curriculum - for technical/technological high schools where a qualification was obtained upon completion of studies; for the tasks listed by ISCO the LO shall be adapted and included.	According to the school curriculum	4	4	According to the type of school/ high school graduated	The outcomes of completed education – educational LO given by the graduation of high school and passing the BAC Eg. Reading, Basic Math, Communication, writing, others depending of the high school profile. Valid for an BAC graduate “high school’s promise to university”	School curriculum	-	12	BAC graduate	If the case	-		Similarly it will be done for each major group. 3.....9



LABOUR MARKET								REGULATORY			EDUCATION								
NACE fields	Code COR/Group	Tasks and duties ISCO	Skills level (ISCO)	Conditions for access	Graduated studies	Occupational competences	Knowledge, skills, autonomy, responsibility	Qualification level CNC	ISCED level	ISCED field	Learning outcomes	Subjects/ Modules	Credits	Year of study	Title	Occupation	NACE field	Comments	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		with learning difficulties or special needs; - providing various business, legal and social services; - creating and performing works of art; - providing spiritual guidance; - preparing scientific papers and reports. - supervision of other workers (taking tertiary education studies)																	
Example: Major sub-group 21 - Science and Engineering Professionals – those who pursue the education field listed in column 11																			
A, B, C, D, E, F, G, H, J, M	Major sub-group 21 <i>Science and Engineering Professionals</i>	Science and engineering professionals conduct research; improve or develop concepts, theories and operational methods; or apply scientific knowledge relating to fields such as physics, astronomy, meteorology, chemistry, geophysics, geology, biology, ecology, pharmacology, medicine, mathematics, statistics,	4	Accepted	Upper secondary (High school)	Fundamental skills of the major sub-group (column 3)	To be decided by the representatives of the labour market and education (- Can solve math, physics and chemistry problems - knows how to use ITC - Has elements of communication in Romanian and another foreign language - Has	6	6	05 - Natural sciences, mathematics and statistics 06 - Information and Communication Technologies (ICTs) 07 - Engineering, manufacturing and construction 08 - Agriculture, forestry, fisheries and veterinary	To be decided by the representatives of the labour market and education	Personal Skills	5	An I	-	-	A, B, C, D, E, F, G, H, J, M	Major sub-groups 22 - Health Professionals 23 - Teaching Professionals 24 - Business and Administration Professionals 25 - Information and Communications Technology Professionals 26 - Legal, Social and Cultural Professionals (Subjects and credits depending	Valid for all professionals of major sub-group 21. Similarly it will be done for the rest of the major sub groups include in COR. Taking the subjects from all the major subgroups.
												Mathematics	5						
												Physics	5						
												Chemistry	5						
												ICT, PC hard	5						
												Administrative law	5						
												Economy	5						
												Foreign language	5						
												Education sciences	5						
												Biology	5						



LABOUR MARKET								REGULATORY			EDUCATION								
NACE fields	Code COR/Group	Tasks and duties ISCO	Skills level (ISCO)	Conditions for access	Graduated studies	Occupational competences	Knowledge, skills, autonomy, responsibility	Qualification level CNC	ISCED level	ISCED field	Learning outcomes	Subjects/ Modules	Credits	Year of study	Title	Occupation	NACE field	Comments	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		architecture, engineering, design and technology. Tasks include: - conducting research, enlarging, advising on or applying scientific knowledge obtained through the study of structures and properties of physical matter and phenomena, chemical characteristics and processes of various substances, materials and products, all forms of human, animal and plant life and of mathematical and statistical concepts and methods; - advising on, designing and directing construction of buildings, towns and traffic systems, or civil engineering and industrial structures,					knowledge of law)					Sociology	5					on the major sub-group)	
												Sport – team	5						
												Total	60						
												Some subjects can be chosen from a list of similar sybjects, for instance: Several foreign languages or Economy/ macro economy/ micro economy Administrative/ commercial/ constitutional law Educational sciences/ personal skills/ antrepreneurship Similarly, for other subjects, variants can be created from the same major group to help with furture recognition of qualifications.							



LABOUR MARKET								REGULATORY			EDUCATION								
NACE fields	Code COR/Group	Tasks and duties ISCO	Skills level (ISCO)	Conditions for access	Graduated studies	Occupational competences	Knowledge, skills, autonomy, responsibility	Qualification level CNC	ISCED level	ISCED field	Learning outcomes	Subjects/ Modules	Credits	Year of study	Title	Occupation	NACE field	Comments	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		as well as machines and other equipment; - advising on and applying mining methods and ensuring their optimum use; - surveying land and sea and making maps; - studying and advising on technological aspects of particular materials, products and processes, and on efficiency of production and work organization; - preparing scientific papers and reports - supervision of other workers																	



LABOUR MARKET								REGULATORY			EDUCATION								
NACE fields	Code COR/Group	Tasks and duties ISCO	Skills level (ISCO)	Conditions for access	Graduated studies	Occupational competences	Knowledge, skills, autonomy, responsibility	Qualification level CNC	ISCED level	ISCED field	Learning outcomes	Subjects/ Modules	Credits	Year of study	Title	Occupation	NACE field	Comments	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Example: Groups 214, 215 - engineers – technical higher education institutions																			
A, B, C, D, E, F, G, H, J, M	Minor group 214 <i>Engineering Professionals (excluding Electrotechnology)</i>	Engineering professionals (excluding electro technology) design, plan and organize the testing, construction, installation and maintenance of structures, machines and their components, and production systems and plants; and plan production schedules and work procedures to ensure that engineering projects are undertaken safely, efficiently and in a cost-effective manner.	4	No. of credits	According to the no. of credits	Basic skills for the related major group corresponding to the tasks and responsibilities from column 3 + transversal skills: management, communication, IT, sociology, economy, legislation, law, sports	To be decided by the representatives of the labour market and education	6	6	07 - Engineering, manufacturing and construction	To be decided by the representatives of the labour market and education	Heat engineering	5	II	-			211 Physical and Earth Science Professionals 212 Mathematicians, Actuaries and Statisticians 213 Life Science Professionals 214 Engineering Professionals (excluding Electrotechnology) 215 Electrotechnology Engineers 216 Architects, Planners, Surveyors and Designers	Valid for all individuals with tertiary education, major group 214. Similarly it will be done for each minor group. Connection to the rest of minor groups.
												Mathematics	5						
												Statistics	5						
												Electrotechnics	5						
												Mechanics	5						
												Science of materials	5						
												Infographics	10						
												Legislation – quality assurance	5						
												Project management	5						
												Life sciences	5						
												Optional (humanities, civilization, sports, foreign languages)	5						
												Total	60						
												Variants from the same field can also be included, such as life sciences.							



LABOUR MARKET								REGULATORY			EDUCATION								
NACE fields	Code COR/Group	Tasks and duties ISCO	Skills level (ISCO)	Conditions for access	Graduated studies	Occupational competences	Knowledge, skills, autonomy, responsibility	Qualification level CNC	ISCED level	ISCED field	Learning outcomes	Subjects/ Modules	Credits	Year of study	Title	Occupation	NACE field	Comments	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Example: Unit group 2144 - Mechanical Engineers – Faculty of mechanics																			
A, C	Unit group 2144 Mechanical Engineers	Mechanical engineers conduct research; advise on, design, and direct production of machines, aircraft, ships, machinery and industrial plant, equipment and systems; advise on and direct their functioning, maintenance and repair; or study and advise on mechanical aspects of particular materials, products or processes.	4	No. of Credits	According to the no. of credits	Domain skills for the related major group corresponding to the tasks and responsibilities from column 3 + transversal skills: management, communication, IT, sociology, economy, legislation, law, sports	To be decided by the representatives of the labour market and education	6	6	071 - Engineering and engineering trades	To be decided by the representatives of the labour market and education	Metals technology	5	III	Bachelor mechanical engineer			2141 Industrial and Production Engineers 2142 Civil Engineers 2143 Environmental Engineers 2144 Mechanical Engineers 2145 Chemical Engineers 2146 Mining Engineers, Metallurgists and Related Professionals 2149 Engineering Professionals Not Elsewhere Classified	Valid for all individuals with tertiary education, major group 2144. Similarly it will be done for each group.
												Mechanics 2	5						
												Ecotechnologies	5						
												Materials strengths	5						
												Statics, cinematics	5						
												Chemistry and materials science	5						
												Hydraulics and pneumatics	5						
												Marketing and business	5						
												Legislation and labour protection and safety	5						
												Foreign languages and communication/ sports/ culture	5						
												Assisted design	5						
												Practical courses	5						
												Total	60						



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LABOUR MARKET								REGULATORY			EDUCATION								
NACE fields	Code COR/Group	Tasks and duties ISCO	Skills level (ISCO)	Conditions for access	Graduated studies	Occupational competences	Knowledge, skills, autonomy, responsibility	Qualification level CNC	ISCED level	ISCED field	Learning outcomes	Subjects/ Modules	Credits	Year of study	Title	Occupation	NACE field	Comments	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2)																			
Example: Occupation 214439 – trial pilot engineer																			
A, C	Occupation 214439 trial pilot engineer	To be decided at national level.	4		Bachelor	Competences specific for the occupation	To be decided by the representatives of the labour market and education	7	7	0716 - Motor vehicles, ships and aircraft - the study of designing, developing, producing, maintaining, diagnosing faults in, repairing and servicing motor vehicles Typical is the combination of studies in both metal structures and motors.	To be decided by the representatives of the labour market and education	To be decided	15-60	IV	Professional engineer	214439 Master engineer (specialist)	A, C	214401 mechanical engineer 214402 mechanical engineer technician 214403 mining electromechanical engineer 214404 aerodynamics engineer (.....) 214488 hazardous goods mobile superstructures inspector 214489 mechanical officer	Similarly for each occupation

1) the domain/field programmes – framework programmes – competences for higher education = ANC + ARACIS. To be updated at evry 5 years.

2) specialiezed programmes – to be added the competences specific for the occupation – in the responsibility of the universities and ARACIS, and the professionals of the related sector



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The guide was submitted for consultation of the stakeholders on 27-28.06.2017 as well as for the approval of the international expert to the project, Mr. Volker Gehmlich (University of Applied Sciences - Hochschule Osnabrück, Germania).

The guide shall be updated and improves in time, as it is implemented.

Thank you!



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DEFINITIONS AND ABBREVIATIONS

TERMEN	DEFINIȚIE
Skills	<p>The ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments) (<i>Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03)</i>).</p> <p>Skills are expressed by: problems application, transfer and solving, critical and constructive reflection, creativity and innovation, according to the provisions of National Education Act no. 1/2011, as further amended.</p>
Graduate of a vocational education and training programme	An individual who has successfully completed an education programme (<i>Source: International Classification of Education - ISCED-2011</i>)
Graduation	The successful completion of an education programme. It is possible for a graduate to have more than one graduation if the student was enrolled simultaneously in two or more programmes and successfully completed them. (<i>Source: International Classification of Education - ISCED-2011</i>)
Learning activity	Deliberate activity in which an individual participates with the intention to learn (<i>Source: International Classification of Education - ISCED-2011</i>)
Educational activity	Deliberate activity involving some form of communication intended to bring about learning (<i>Source: International Classification of Education - ISCED-2011</i>)



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TERMEN	DEFINIȚIE
NQA (Rom. ANC)	National Qualifications Authority
ARACIP	The Romanian Agency for Quality Assurance in Secondary Education
ARACIS	The Romanian Agency for Quality Assurance in Higher Education
Education quality assurance	Means the capacity of an educational service supplier organization to provide educational programs according to announced standards, ensured by a set of actions meant to develop the institutional capacity, and draft, plan and implement study programmes, which builds the beneficiaries' trust in the fact that the educational services supplier organization meets quality standards (<i>Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex</i>)
Competent authority	Any authority or body empowered by a Member State specifically to issue or receive training diplomas and other documents or information and to receive the applications, and take the decisions. (<i>Source: DIRECTIVE 2005/36/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 7 September 2005 on the recognition of professional qualifications, art. 3/(1)/d</i>)
National Qualifications Framework - NQF	Means an instrument for the classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims at integrating and coordinating national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society. (<i>Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03)</i>)



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TERMEN	DEFINIȚIE
National Qualifications Framework - NQF	A tool used to establish qualifications, in line with a set of criteria corresponding to certain specific learning levels. The National Qualifications Framework aims at integrating and coordinating national qualification subsystems and enhancing transparency, access, progress and quality of qualifications according to the labour market and the civil society. (<i>Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex</i>)
National Framework of Higher Education Qualifications - CNCIS	A tool used to establish the structure of qualifications in higher education. CNCIS aims to ensure coherence of the qualifications and the degrees obtained within the higher education system. CNCIS ensures national recognition, as well as international compatibility and comparability of the qualifications obtained through higher education. CNCIS is part of the National Qualifications Framework. (<i>Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex</i>)
NACE	Classification of National Economy Activities
Qualification (ISCED 2011)	The official confirmation, usually in the form of a document, certifying the successful completion of an education programme or a stage of a programme. Qualifications can be obtained through: i) successful completion of a full education programme; ii) successful completion of a stage of an education programme (intermediate qualifications); or iii) validation of acquired knowledge, skills and competencies, independent of participation in an education programme. This may also be referred to as a 'credential'. (<i>Source: International Classification of Education - ISCED-2011</i>)
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved learning outcomes to given standards. (<i>Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the</i>



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	<i>establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03))</i>
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to prior set standards. <i>(Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex)</i>
International qualification	A qualification awarded by a legally established international body (association, organisation, sector or company) or by a national body acting on behalf of an international body that is used in more than one country and that includes learning outcomes assessed with reference to standards established by an international body <i>(Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03))</i>
Quality of education	The total set of characteristics of a study programme or vocational qualification programme or of its provider, compliant with the quality standards and the beneficiaries' expectations <i>(Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex)</i>
EC	European Commission
CEDEFOP	European Center for the Development of Vocational Training
Certifying learning outcomes	The process whereby it is established that an individual acquired certain knowledge, skills and competences <i>(Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex)</i>
Competence	The proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and

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TERMEN	DEFINIȚIE
	in professional and personal development. (<i>Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03)</i>)
Competence	The proven capacity to select, combine and adequately use the knowledge, skills and other assets consisting in values and attitudes in order to successfully solve a certain category of job or learning situations, as well as for professional or personal development under efficacy and efficiency conditions. (<i>Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex</i>)
COR	Romanian Classification of Occupations
Credit	Unit in which the successful completion of courses or modules is earned and documented during and at the end of an education programme. Credits express the volume of learning based on a typical workload needed to achieve the expected learning objectives. (<i>Source: International Classification of Education - ISCED-2011</i>)
Credit	Means confirmation that a part of a qualification, consisting of a coherent set of learning outcomes has been assessed and validated by a competent authority, according to an agreed standard; credit is awarded by competent authorities when the individual has achieved the defined learning outcomes, evidenced by appropriate assessments and can be expressed in a quantitative value (e.g. credits or credit points) demonstrating the estimated workload an individual typically needs for achieving related learning outcomes. (<i>Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European</i>



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	<i>Qualifications Framework for lifelong learning (2017/C 189/03))</i>
Criterion	Represents a set of standards regarding a key organizational and operational aspect of an education service supplier/providing unit/institution during the process of provisional functioning authorization/accreditation/quality evaluation and assurance. (Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex)
Knowledge	The outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the EQF, knowledge is described as theoretical and/or factual. (Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03))
Knowledge	Represents the outcome of acquiring, by learning, a set of facts, principles, theories and practices related to a certain work or study field. (Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex)
Additional Europass documents regarding qualifications	A set of documents, including the Diploma Supplement and the Certificate Supplement, issued by the competent authorities.
Field of education field	Broad domain, branch or area of content covered by an education programme, course or module. It often refers to ECTS – the European system of transferable credits.
Education	The processes by which societies deliberately transmit their accumulated information, knowledge, understanding, attitudes, values, skills, competencies and behaviours across generations. It involves communication designed to bring about learning.



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	(Source: <i>International Classification of Education - ISCED-2011</i>)
Education	The overall processes of implementing programs and activities of learning and creating academic or vocational skills and competences. Education includes learning activities both in a formal and in a non-formal or informal context. (Source: <i>National Education Act no. 1 / 2011, as further amended and supplemented – Annex</i>)
Formal education	Education that is institutionalised, intentional and planned through public organizations and recognised private bodies and – in their totality – constitute the formal education system of a country. Formal education programmes are thus recognised as such by the relevant national education authorities or equivalent authorities, e.g. any other institution in cooperation with the national or sub-national education authorities. Formal education consists mostly of initial education. Vocational education, special needs education and some parts of adult education are often recognised as being part of the formal education system. (Source: <i>International Classification of Education - ISCED-2011</i>)
General education	Education programmes that are designed to develop learners' general knowledge, skills and competencies, as well as literacy and numeracy skills, often to prepare students for more advanced education programmes at the same or higher ISCED levels and to lay the foundation for lifelong learning. General education programmes are typically school- or college-based. General education includes education programmes that are designed to prepare students for entry into vocational education but do not prepare for employment in a particular occupation, trade, or class of occupations or trades, nor lead directly to a labour market-relevant qualification. (Source: <i>International Classification of Education - ISCED-2011</i>)
Initial education	Formal education of individuals before their first entrance to the labour market, i.e. when they will normally be in full-time education. It thus targets individuals who are regarded as



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	children, youth and young adults by their society. It typically takes place in educational institutions in a system designed as a continuous educational pathway. (Source: <i>International Classification of Education - ISCED-2011</i>)
Work-based education	Educational activities which take place in a work environment, usually in the context of vocational education programmes. The aim is to achieve specific learning objectives through practical instruction and participation in work activities under the guidance of experienced workers or trainers. (Source: <i>International Classification of Education - ISCED-2011</i>)
Non-formal education	Education that is institutionalised, intentional and planned by an education provider. The defining characteristic of non-formal education is that it is an addition, alternative and/or complement to formal education within the process of the lifelong learning of individuals. It is often provided to guarantee the right of access to education for all. It caters to people of all ages but does not necessarily apply a continuous pathway-structure; it may be short in duration and/or low-intensity, and it is typically provided in the form of short courses, workshops or seminars. Non-formal education mostly leads to qualifications that are not recognised as formal or equivalent to formal qualifications by the relevant national or sub-national education authorities or to no qualifications at all. Non-formal education can cover programmes contributing to adult and youth literacy and education for out-of school children, as well as programmes on life skills, work skills, and social or cultural development. (Source: <i>International Classification of Education - ISCED-2011</i>)
Permanent education	Represents the overall teaching activities performed by each person during their lifetime in formal, non formal and informal contexts, for the purpose of training and developing skills from a complex perspective: personal, civil, social or occupational. (Source: <i>National Education Act no. 1 / 2011, as further amended and supplemented</i>)



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Vocational education and training	A coherent and permanent set of learning activities and experiences undergone by the learner during the entire period of his/her educational-training route. (<i>Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex</i>)
Regulated education and training	Any training which is specifically geared to the pursuit of a given profession and which comprises a course or courses complemented, where appropriate, by professional training, or probationary or professional practice. (<i>Source: DIRECTIVE 2005/36/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 7 September 2005 on the recognition of professional qualifications, art. 3/(1)/e</i>)
EQF	The European Qualifications Framework for lifelong learning is a benchmark used to compare the qualification levels of various qualification systems, which promotes both lifelong learning and equal opportunities in a knowledge-based society, as well as the further integration of citizens on the European labour market, while respecting the great diversity of national educational systems (<i>Source: National Education Act no. 1 / 2011, as further amended and supplemented – Annex</i>)
ESCO	European Classification of Skills, Competences, Qualifications and Occupations
EURES	The European job portal, it is a cooperation network designed to facilitate the free movement of workers within the EU 28 countries plus Switzerland, Iceland, Liechtenstein and Norway. The network is composed of: the European Coordination Office (ECO), the National Coordination Offices (NCOs), EURES Partners and the Associated EURES Partners. EURES has an important role to play in providing specific information and facilitate placements for the benefit of employers and frontier workers in European cross-border regions. In practice EURES provides its services through the portal and through a human network of around 1000 EURES advisers that are in daily contact with jobseekers and employers across Europe.



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EUROPASS	European Skills Passport is a personal portfolio of documents citizens can use in order to give a comprehensive picture of their skills and qualifications in Europe, to facilitate the access to the labour market or the vocational and training programmes. It is not a validation instrument or of official recognition of skills and qualifications, but a presentation platform of such, facilitating their recognition at European level.
Skills assessment	Means the process or method used to evaluate, measure and eventually describe the skills of individuals. This may include self-assessment or assessment certified by a third party. (<i>Source: Proposal for a DECISION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on a common framework for the provision of better services for skills and qualifications (Europass) and repealing Decision No 2241/2004/EC, 04.10.2016</i>)
Institutional assessment quality	The multi-criteria examination of education quality, of the extent to which an education service supplier/providing unit/institution and its programs fulfil the standards and the reference standards. When quality evaluation is conducted by the organization, it shall be carried out as an internal evaluation. When quality evaluation is conducted by a specialized national or worldwide agency, it shall be carried out as an external evaluation. (<i>Source: National Education Act no. 1 / 2011, as further amended and supplemented - Annex</i>)
Assessment of learning outcomes	Process of appraising knowledge, know-how, skills and/or competences of an individual against predefined criteria (learning expectations, measurement of learning outcomes). Assessment is typically followed by certification. (<i>Source: Cedefop Glossary https://europass.cedefop.europa.eu/ro/education-and-training-glossary</i>)
Assessment of learning outcomes	The process whereby it is established that an individual acquired certain knowledge, skills and competences. (<i>Source: National</i>



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	<i>Education Act no. 1/ 2011, as further amended and supplemented - Annex)</i>
Professional experience	The actual and lawful pursuit of the profession concerned in a Member State. (<i>Source: DIRECTIVE 2005/36/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 7 September 2005 on the recognition of professional qualifications, art. 3/(1)/f</i>)
Completion of an education programme	Participation in all components of an education programme (including final examinations if any), irrespective of the result of any potential assessment of achievement of learning objectives. (<i>Source: International Classification of Education - ISCED-2011</i>)
Vocational education and training provider	An organization offering vocational education and training, either as main or secondary object of activity. It can be a public education institution, but also a private company, non governmental institution or public non-educational body. (<i>Source: NQA Glossary - http://www.anc.edu.ro/uploads/images/glosar.pdf</i>)
General upper secondary education	Post-secondary non-tertiary education is positioned between upper secondary education and tertiary education. General upper secondary education prepares students for progression to tertiary education, while the vocational upper secondary education prepares students for entering the labour market. (<i>Source: International Classification of Education - ISCED-2011</i>)
General secondary education	Prepares students for progression to higher secondary level or tertiary level, but usually does not aim to entering the labour market for a specific occupation or industry sector, neither for a direct access to a qualification relevant for the labour market. (<i>Source: International Classification of Education - ISCED-2011</i>)
Vocational education	Education programmes that are designed for learners to acquire the knowledge, skills and competencies specific to a particular



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	occupation, trade, or class of occupations or trades. Vocational education may have work-based components (e.g. apprenticeships, dual-system education programmes). Successful completion of such programmes leads to labour market-relevant vocational qualifications acknowledged as occupationally-oriented by the relevant national authorities and/or the labour market. (<i>Source: International Classification of Education - ISCED-2011</i>)
Vocational upper secondary education	Post-secondary non-tertiary education is positioned between upper secondary education and tertiary education. General upper secondary education prepares students for progression to tertiary education, while the vocational upper secondary education prepares students for entering the labour market. (<i>Source: International Classification of Education - ISCED-2011</i>)
Learning	The individual acquisition or modification of information, knowledge, understanding, attitudes, values, skills, competencies or behaviours through experience, practice, study or instruction. (<i>Source: International Classification of Education - ISCED-2011</i>)
Learning in formal context	Learning activities organized and structured, conducted in an institutionalized environment and based on an explicit didactic design. This type of learning has objectives, durations and resources allocated, it depends on the will of the learner and ends with an institutionalized certification of the knowledge and skills acquired. (<i>Source: National Education Act no. 1/2011, as further amended and supplemented</i>)
Learning in informal contexts	Represents the result of various daily activities related to the workplace, the family environment, leisure time and is not organized and structured related to objectives, durations or learning support. This type of learning does not depend on the will of the learner and does not lead to automatically obtaining the institutionalized certification of the knowledge and skills



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	acquired. <i>(Source: National Education Act no. 1/ 2011, as further amended and supplemented)</i>
Learning in non-formal contexts	Is considered to be integrated in certain planned activities, with learning objectives, which do not follow a curriculum and can have various durations. This type of learning depends on the will of the learner and does not lead to automatically obtaining the institutionalized certification of the knowledge and skills acquired. <i>(Source: National Education Act no. 1/ 2011, as further amended and supplemented)</i>
Lifelong learning	Is includes early education, secondary education, tertiary education and adult learning and is focussed on developing the key competences and specific skills for a field of activity or a qualification. <i>(Source: National Education Act no. 1/ 2011, as further amended and supplemented)</i>
ISCED	The International Standard Classification of Education
ISCED 2011	ISCED 2011 presents a revision of the ISCED 1997 levels of education classification. It also introduces a related classification of educational attainment levels based on recognised educational qualifications..
ISCO	International Standard Classification of Occupations
ISCO 08 – JOB	A set of tasks and duties performed or meant to be performed by a person, including for an employer or as freelancer.
MEN	The Ministry of National Education
Trade	Is the qualification obtained through the education, vocational training necessary for performing certain operations of practical nature of transforming and operating the objects of labour, or for providing services. The structure of the aptitude test as well as the status of the person who wishes to train for the aptitude test from the respective Member state are established by the relevant competent authorities.



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MMJS	The Ministry of Labour and Social Justice
EQF level	Levels 1-8 of the European Qualification Framework
Learning objectives	Specification of learning outcomes to be achieved upon completion of an educational or learning activity. These encompass improving knowledge, skills and competencies within any personal, civic, social or employment-related context. Learning objectives are typically linked to the purpose of preparing for more advanced studies and/or an occupation, trade, or class of occupations or trades. (<i>Source: International Classification of Education - ISCED-2011</i>)
Occupation	Group of jobs which involve similar tasks and need a set of similar skills.
Diplomas/certificates awarding body	A body issuing qualifications (certificates, diplomas or titles) formally recognising the learning outcomes (knowledge, skills and/or competences) of an individual, following an assessment procedure. (<i>Source: CEDEFOP, 2008</i>). http://www.cedefop.europa.eu/en/events-and-projects/projects/validation-non-formal-and-informal-learning/european-inventory/european-inventory-glossary
Education organization provider	The organization interested in providing educational services is a legal entity which has in its object of activity educational activities and is subject to the authorization process in order to become an education provider.
Organizations	Employers, recruiters, education institutions and vocational training institutions, as well as other stakeholders who are interested in education, training and employment.
Profession	Represents the specialization (qualification) obtained through tertiary studies and which designates an intellectual occupation, exercised by a person on its own, usually independently.
Regulated profession	A professional activity or group of professional activities, access to which, the pursuit of which, or one of the modes of pursuit of



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	which is subject, directly or indirectly, by virtue of legislative, regulatory or administrative provisions to the possession of specific professional qualifications; in particular, the use of a professional title limited by legislative, regulatory or administrative provisions to holders of a given professional qualification shall constitute a mode of pursuit. Where the first sentence of this definition does not apply, a profession referred to in paragraph 2 shall be treated as a regulated profession (Source: DIRECTIVE 2005/36/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 7 September 2005 on the recognition of professional qualifications, art. 3/(1)/a)
Vocational qualification programmes	The educational offer which leads to acquiring a vocational qualification registered in the National Qualifications Register (Source: National Education Act no. 1/ 2011, as further amended and supplemented - Annex)
Study programmes	Materialize the educational offer of an organization which provides educational services (Source: National Education Act no. 1/ 2011, as further amended and supplemented - Annex)
Vocational training credits	Represent the numeric expression of the importance of a learning outcome unit related to a qualification (Source: National Education Act no. 1/ 2011, as further amended and supplemented - Annex)
Official recognition of individual diplomas, academic or professional	The process by which the diplomas are validated in view of facilitating access of their owners to activities related to education and/or employment. There must be made a distinction between at least two types of recognition: that for academic needs and that for professional needs.
Professional recognition	It regards the right to practice and the professional status awarded to a holder of a diploma. Due to different regulations regarding diplomas and titles, there can be two groups: professional recognition <i>de iure</i> , applied to the right to practice in a certain country, within a regulated profession (such as the doctor profession). In the European Union, for instance, the

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	respective regulations are in force both in the countries of origin and the host countries and are the object of several specific directives of the European Union. The professional recognition <i>de facto</i> is related to the non-regulated recognition, such as the cases where a legal national authorization is not required.
Recognition of prior learning outcomes	It means the official recognition of abilities, knowledge and skills acquired through work experience, informal training and life experience.
Recognition of learning outcomes and related credits	The process whereby the acquired, evaluated and validated learning outcomes and credits are granted an official status for the purpose of obtaining the vocational qualification certificate. <i>(Source: National Education Act no. 1/ 2011, as further amended and supplemented)</i>
Formal recognition of learning outcomes	The process of granting official status by a competent authority to acquired learning outcomes for purposes of further studies or employment, through i) award of qualifications (certificates, diploma or titles), ii) validation of non-formal and informal learning, iii) grant of equivalence, credit or waivers. <i>(Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03))</i>
Responsibility/ autonomy	In the context of the EQF, it means the ability of the learner to apply knowledge and skills autonomously and with responsibility. <i>(Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03))</i>
Learning outcomes	What a person understands, knows and is capable of doing at the end of a learning process. The learning outcomes consist of the



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	knowledge, skills and competences acquired during various formal, non-formal and informal learning experience (<i>Source: National Education Act no. 1/ 2011, as further amended and supplemented</i>)
Learning outcomes	statements regarding what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy (<i>Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03)</i>)
RNC	The national qualifications register – a database comprising the description of all qualifications in Romania. (<i>Source: National Education Act no. 1/ 2011, as further amended and supplemented – Annex</i>)
RNCIS	The national register of higher education qualifications
National system qualifications	All aspects of a Member State's activity related to the recognition of learning and other mechanisms that link education and training to the labour market and civil society. That includes the development and implementation of institutional arrangements and processes relating to quality assurance, assessment and the award of qualifications. A national qualifications system may be composed of several subsystems and may include a national qualifications framework. (<i>Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03)</i>)
Credits system	A transparency tool for facilitating the recognition of credit(s). These systems can comprise, inter alia, equivalences,



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	exemptions, units/modules that can be accumulated and transferred, the autonomy of providers who can individualise pathways, and the validation of non-formal and informal learning. (<i>Source: COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03)</i>)
National education system	It encompasses all the education units and institutions, public, private or confessional accredited, of various types, levels and forms of organization of the education and training activities.
SOEFP	Occupational Standard of Vocational Education and Training (<i>Standard Ocupațional de Educație și Formare Profesională</i>)
Standards	The description of the requirements in terms of rules or outcomes, defining the minimal compulsory level of performing an educational activity. Any standard is set out in general terms, as a statement, and materializes as a set of performance indicators. Standards are differentiated by criteria and fields. (<i>Source: National Education Act no. 1/ 2011, as further amended and supplemented – Annex</i>)
Reference standard	The description of the requirements defining an optimal level of performance of an activity, by the education service supplier/providing unit/institution, based on the good practice existing at national, European or worldwide level. Reference standards are specific to each study programme or each institution, are optional and are above the minimal level. (<i>Source: National Education Act no. 1/ 2011, as further amended and supplemented – Annex</i>)
Europass Supplement Certificate	A document describing the knowledge and skills acquired by holders of vocational training certificates. The document contains, among others, information regarding the acquired skills, the range of available professional activities, the certifying bodies, the level of qualification, the necessary



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	admission requirements and the possibilities of acces to the next level of training. It does not replace the original certificate and does not ensure automatic recognition. It is issued by the competent national authorities. (<i>Source: CEDEFOP, 2014</i>).
Professional certificate supplement	A document accompanying the professional certificate, so that third parties can more easily understand the learning outcomes acquired by the holder of the certificate, as well as the nature, level, context, content and status of the completed studies.
Diploma supplement	A document accompanying a higher education diploma, so that third parties can more easily understand the learning outcomes acquired by the holder of the certificate, as well as the nature, level, context, content and status of the completed studies.
Evidence of formal qualifications	Diplomas, certificates and other evidence issued by an authority in a Member State designated pursuant to legislative, regulatory or administrative provisions of that Member State and certifying successful completion of professional training obtained mainly in the Community. (<i>Source: DIRECTIVE 2005/36/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 7 September 2005 on the recognition of professional qualifications, art. 3/(1)/c</i>)
Evidence of formal qualifications	Any diploma, certificate and other evidence issued by an authority in a Member State designated pursuant to legislative, regulatory or administrative provisions of that Member State and certifying successful completion of professional training obtained mainly in the European Union. (<i>Source: National Education Act no. 1/ 2011, as further amended and supplemented – Annex</i>)
Transfer of learning outcomes and related credits	The process whereby learning outcomes and related credits are transferred to and integrated within the vocational training program attended by the learner. (<i>Source: National Education Act no. 1/2011, as further amended and supplemented – Annex</i>)
Transfer of credits	The process of allowing individuals who have accumulated credit in one context to have it valued and recognised in another



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	context. (Source: <i>COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03)</i>)
EU	European Union
UNESCO	The United Nations Educational, Scientific and Cultural Organization
Learning outcome unit	The part of a qualification including a coherent set of knowledge, skills and general competences which can be evaluated and validated. (Source: <i>National Education Act no. 1/ 2011, as further amended and supplemented – Annex</i>)
Validation of non-formal and informal learning	The process of confirmation by a competent authority that an individual has acquired learning outcomes acquired in non-formal and informal learning settings measured against a relevant standard and consists of the following four distinct phases: identification through dialogue of particular experiences of an individual, documentation to make visible the individual's experiences, a formal assessment of those experiences and certification of the results of the assessment which may lead to a partial or full qualification. (Source: <i>COUNCIL RECOMMENDATION of 22 May 2017 on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (2017/C 189/03)</i>)
Validation outcomes learning	The process confirming that the learning outcomes acquired by an individual, which are evaluated and certified, meet the specific requirements for a certain unit or qualification. (Source: <i>National Education Act no. 1/ 2011, as further amended and supplemented – Annex</i>)



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ANNEX 1. NATIONAL QUALIFICATION FRAMEWORK

Resolution no. 918/2013 for approving the National Qualifications Framework, as further amended

Annex 1

THE NATIONAL QUALIFICATIONS FRAMEWORK - NQF

Descriptors defining levels in the National Qualifications Framework			
Qualification levels	Knowledge*	Skills**	Competence***
Level 1 The learning outcomes related to level 1 are	Basic general knowledge	Basic skills required to carry out simple tasks	Work or study under direct supervision in a structured context
Level 2 The learning outcomes related to level 2 are	Basic factual knowledge of a field of work or study	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	Work or study under supervision with some autonomy
Level 3 The learning outcomes related to level 3 are	Knowledge of facts, principles, processes and general concepts, in a field of work or study	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	Take responsibility for completion of tasks in work or study; adapt own behaviour to circumstances in solving problems

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Descriptors defining levels in the National Qualifications Framework			
Qualification levels	Knowledge*	Skills**	Competence***
Level 4 The learning outcomes related to level 4 are	Factual and theoretical knowledge in broad contexts within a field of work or study	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Level 5 The learning outcomes related to level 5 are	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others
Level 6 The learning outcomes related to level 6 are	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups

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Descriptors defining levels in the National Qualifications Framework			
Qualification levels	Knowledge*	Skills**	Competence***
Level 7 The learning outcomes related to level 7 are	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research; critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8 The learning outcomes related to level 8 are	Knowledge at the most advanced frontier of a field of work or study and at the interface between fields	The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

* In the context of NQF, knowledge is described as theoretical and/or factual.

** In the context of NQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking), and practical (involving manual dexterity and the use of methods, materials, tools and instruments).

*** In the context of NQF, competence is described in terms of responsibility and autonomy.



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ANNEX 2. EUROPEAN QUALIFICATION FRAMEWORK

COUNCIL RECOMMENDATION

of 22 May 2017

on the European Qualifications Framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning

(2017/C 189/03)

ANNEX II

Descriptors defining levels in the European Qualifications Framework (EQF)

Each of the 8 levels is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications.

	Knowledge	Skills	Responsibility and autonomy
	In the context of EQF, knowledge is described as theoretical and/or factual.	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	In the context of the EQF responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility
Level 1 The learning outcomes relevant to Level 1 are	basic general knowledge	basic skills required to carry out simple tasks	work or study under direct supervision in a structured context
Level 2 The learning outcomes relevant to Level 2 are	basic factual knowledge of a field of work or study	basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools	work or study under supervision with some autonomy

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Each of the 8 levels is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications.			
	Knowledge	Skills	Responsibility and autonomy
Level 3 The learning outcomes relevant to Level 3 are	knowledge of facts, principles, processes and general concepts, in a field of work or study	a range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information	take responsibility for completion of tasks in work or study adapt own behaviour to circumstances in solving problems
Level 4 The learning outcomes relevant to Level 4 are	factual and theoretical knowledge in broad contexts within a field of work or study	a range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study	exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities
Level 5 ^(*) The learning outcomes relevant to Level 5 are	comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	a comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	exercise management and supervision in contexts of work or study activities where there is unpredictable change review and develop performance of self and others
Level 6 ^(*) The learning outcomes relevant to Level 6 are	advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts take responsibility for managing professional development of individuals and groups



Each of the 8 levels is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at that level in any system of qualifications.

	Knowledge	Skills	Responsibility and autonomy
Level 7 ^{(*)3} The learning outcomes relevant to Level 7 are	highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research critical awareness of knowledge issues in a field and at the interface between different fields	specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
Level 8 ^{(*)4} The learning outcomes relevant to Level 8 are	knowledge at the most advanced frontier of a field of work or study and at the interface between fields	the most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

The Framework for Qualifications of the European Higher Education Area provides descriptors for three cycles agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process. Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle.

^{(*)1} The descriptor for the short cycle developed by the Joint Quality Initiative as part of the Bologna process, (that can be within or linked to the first cycle), corresponds to the learning outcomes for EQF level 5.

^{(*)2} The descriptor for the first cycle corresponds to the learning outcomes for EQF level 6.

^{(*)3} The descriptor for the second cycle corresponds to the learning outcomes for EQF level 7.

^{(*)4} The descriptor for the third cycle corresponds to the learning outcomes for EQF level 8.

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ANNEX 4 EXAMPLES OF LEARNING OUTCOMES NACE C – MANUFACTURING

Activity sector - NACE	10 - Manufacture of food products
Unit group - ISCO	2145 Chemical Engineers
Occupation - COR	214514 Food engineer
Narrow field - ISCED	0721 Food processing
Skills/ Competence - ESCO	<ul style="list-style-type: none"> – apply requirements concerning manufacturing of food and beverages – develop food production processes – manage all process engineering activities

Examples of learning outcomes for the bachelor programme in *Agricultural Products Processing*

No.	Who	What/ action verb	Object and purpose of learning	Occupational and/or social context the qualification is relevant for
1	The graduate	distinguishes	between the various technologies	designed for industrial food production.
				<i>The graduate distinguishes between the various technologies designed for industrial food production.</i>
2	The graduate	applies	the knowledge and can perform best practice	to ensure compatibility of the end products with national and international standards.
				<i>The graduate applies the knowledge and can perform best practice to ensure compatibility of the end products with national and international standards.</i>
3	The graduate	can evaluate	the quality of products and the entire supply chain	by standardized methods and in compliance with specifications.

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No.	Who	What/ action verb	Object and purpose of learning	Occupational and/or social context the qualification is relevant for
	<i>The graduate can evaluate the quality of products and the entire supply chain by standardized methods and in compliance with specifications.</i>			
4	The graduate	can create	an efficient and effective supply chain of food production	respecting managerial and engineering perspectives.
	<i>The graduate can create an efficient and effective supply chain of food production respecting managerial and engineering perspectives.</i>			
5	The graduate	can design	the new products and technologies	for development the supply chain continuously.
	<i>The graduate can design the new products and technologies for development the supply chain continuously.</i>			
6	The graduate	can perform	specific activities to team work	through a good relationship and realizing the various team-roles of their members.
	<i>The graduate can perform specific activities to team work, through a good relationship and realizing the various team-roles of their members.</i>			
7	The graduate	can organize	the suitable continuous development	for his professional career.
	<i>The graduate can organize the suitable continuous development for his professional career.</i>			



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ANNEX 5 EXAMPLES OF LEARNING OUTCOMES NACE C – MANUFACTURING

Activity sector - NACE	25- Manufacture of fabricated metal products, except machinery and equipment
Unit group - ISCO	2144 Mechanical engineers
Occupation - COR	214401 Mechanical engineer
Narrow field - ISCED	0715 Mechanics and metal trades
Skills/ Competence - ESCO	<ul style="list-style-type: none"> – Manufacturing processes – Production processes – Develop product design

Examples of Learning outcomes for the study programme: *Manufacturing Engineering – TCM*

No.	Who	What/ action verb	Object and purpose of learning	Occupational and/or social context the qualification is relevant for
1	The TCM graduate	can make	calculations, demonstrations and applications in specific professional projects	using creative knowledge and methods from the fundamental science of engineering, can make decisions about the implementation of solutions and is responsible for their correctness.
				<i>The TCM graduate can make calculations, demonstrations and applications in specific professional projects, using creative knowledge and methods from the fundamental science of engineering, can make decisions about the implementation of solutions and is responsible for their correctness.</i>
2	The TCM graduate	can make	technical documentation and	in accordance with specific technical conditions, can make

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No.	Who	What/ action verb	Object and purpose of learning	Occupational and/or social context the qualification is relevant for
			other graphical representations	decisions on the implementation of technical documentation and is responsible for the correctness of its use.
	<i>The TCM graduate can make technical documentation and other graphical representations in accordance with specific technical conditions, can make decisions on the implementation of technical documentation and is responsible for the correctness of its use</i>			
3	The TCM graduate	can perform	specific computer assisted design (CAD) and strength analyzes	using established software applications, can make decisions about adopting suitable technical solutions, and is responsible for prescribing product design features in accordance with their functional role;
	<i>The TCM graduate can make technical documentation and other graphical representations in accordance with specific technical conditions, can make decisions on the implementation of technical documentation and is responsible for the correctness of its use</i>			
4	The TCM graduate	can design	manufacturing technology processes and systems - PST (including CAM)	using advanced manufacturing methods and procedures, can make decisions about adopting an optimal PST variant, and is responsible for obtaining parts in accordance with design features
	<p><i>The TCM graduate can design manufacturing technology processes and systems - PST (including CAM) using advanced manufacturing methods and procedures, can make decisions about adopting an optimal PST variant, and is responsible for obtaining parts in accordance with design features.</i></p> <p>R4.1. (ESCO - Machining technology). The TCM graduate can design the content and structure of PST cutting operations using the principle of concentration or the principle of differentiating activities;</p> <p>A KNOWLEDGE</p> <p>4.1.1. knowledge and understanding</p> <ul style="list-style-type: none"> • Demonstrates general knowledge of designing manufacturing processes and systems based mostly on <i>cutting method</i> 			

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No.	Who	What/ action verb	Object and purpose of learning	Occupational and/or social context the qualification is relevant for
		<ul style="list-style-type: none"> • Demonstrates knowledge regarding the calculation and choice of parameter values of the cutting regimes • Demonstrates knowledge of calculation and choice of processing additions • Demonstrates knowledge of choice of tools, machine tools, devices, and verifiers in each operation • Demonstrates knowledge of establishing possible positioning, orientation and clamping schemes for cutting operations • Demonstrates the knowledge needed to set time rules <p>B. SKILLS</p> <p>4.1.2. Applying knowledge and understanding</p> <ul style="list-style-type: none"> • Has professional communication skills with the working team in compliance with professional ethics • Uses knowledge to group activities into operations and phases using the principle of differentiation or the principle of concentration of activities • XXXXX <p>4.1.3. Communication, ICT and numeracy skills</p> <ul style="list-style-type: none"> • Is able to use databases, on-line applications and other IT tools to determine the values of the cutting parameters • XXXXX <p>4.1.4. Generic cognitive skills – including making judgments</p> <ul style="list-style-type: none"> • Is able to appreciate the advantages and limitations of some processing processes and, on this basis, to choose the appropriate procedure for obtaining the prescribed features of the surface of the workpiece • XXXXX <p>C. COMPETENCE</p> <p>4.1.5. Autonomy and responsibility – including learning skills</p> <ul style="list-style-type: none"> • Is able to make decisions appropriate to the hierarchical level at which he/she operates and assumes responsibility for superior hierarchical levels • XXXXX <p>R4.2. (ESCO-Steel sheet shaping technology). The TCM graduate can design the content and structure of PST cold forming operations using the principle of concentration or the principle of differentiating activities</p> <p>A. KNOWLEDGE</p> <p>4.2.1. knowledge and understanding</p> <ul style="list-style-type: none"> • Demonstrates general knowledge about designing manufacturing processes and systems based mostly on cold forming method • XXXXX 		

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No.	Who	What/ action verb	Object and purpose of learning	Occupational and/or social context the qualification is relevant for
	<p>B. SKILLS</p> <p>4.2.2. Applying knowledge and understanding</p> <ul style="list-style-type: none"> • Is able to use..... • XXXXXX <p>4.2.3. Communication, ICT and numeracy skills</p> <ul style="list-style-type: none"> • Is able to..... • XXXXXX <p>4.2.4. Generic cognitive skills – including making judgments</p> <ul style="list-style-type: none"> • Is able to..... • XXXXXX <p>C. COMPETENCE</p> <p>4.2.5. Autonomy and responsibility – including learning skills</p> <ul style="list-style-type: none"> • Is able to make decisions appropriate to the hierarchical level at which he/she operates and assumes responsibility for superior hierarchical levels • XXXXXX <p>R4.3. (ESCO-etc.....). XXXXXX;</p>			
5	The TCM graduate	can design	equipment, devices, tools and other technical systems	in accordance with modern manufacturing requirements and required data, can make decisions about their implementation in technological processes and is responsible for their performance;
	<p><i>The TCM graduate can design equipment, devices, tools and other technical systems in accordance with modern manufacturing requirements and required data, can make decisions about their implementation in technological processes and is responsible for their performance.</i></p>			
6	The TCM graduate	can manage	manufacturing processes and systems	using project management methods and techniques, can make decisions about quality inspection, and is responsible for the quality of manufacturing and products;



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No.	Who	What/ action verb	Object and purpose of learning	Occupational and/or social context the qualification is relevant for
	<i>The TCM graduate can manage manufacturing processes and systems, using project management methods and techniques, can make decisions about quality inspection, and is responsible for the quality of manufacturing and products.</i>			
7	The TCM graduate	can perform	activities and roles specific to team work	using appropriate communication techniques, can make decisions within the limits of his/her autonomy within the team and is responsible for the consequences of the actions taken;
	<i>The TCM graduate can perform activities and roles specific to team work, using appropriate communication techniques, can make decisions within the limits of his/her autonomy within the team and is responsible for the consequences of the actions taken.</i>			
8	The TCM graduate	can make	an objective self-evaluation of the need for continuing vocational training	effectively using language skills and ICT knowledge, can make decisions about their own continuing vocational training and is responsible for the consequences of these actions on their professional careers
	<i>The TCM graduate can make an objective self-evaluation of the need for continuing vocational training, effectively using language skills and ICT knowledge, can make decisions about their own continuing vocational training and is responsible for the consequences of these actions on their professional careers.</i>			

[....]