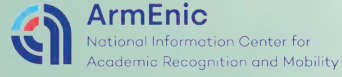




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Comparing qualifications for reliable recognition II

Comparative study report

2022

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The opinions expressed are those of the author(s) only and should not be considered as representative of the European Commission’s official position.

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Abbreviations and acronyms

AIC – Academic Information Centre (Latvia)

ANQA – National Centre for Professional Education Quality Assurance Foundation (Armenia)

ARACIS – Agency for Quality Assurance in Higher Education (Romania)

BAC – British Accreditation Council (United Kingdom)

Cedefop – European Centre for the Development of Vocational Training

CQFW – Credit and qualifications framework of Wales

DS – Diploma Supplement

ENIC – European Network of National Information Centres on academic recognition and mobility

ENQA – European Association for Quality Assurance in Higher Education

EQF – European Qualifications Framework

ESG – Standards and guidelines for quality assurance in the European Higher Education Area

HEI – higher education institution

LO – learning outcome

NARIC – National Academic Recognition Information Centres

NEAA – National Evaluation and Accreditation Agency (Bulgaria)

NQF – national qualifications framework

OFS – Office for Students (United Kingdom)

QA – quality assurance

QAA – Quality Assurance Agency for Higher Education (United Kingdom)

QUATREC – Comparing qualifications for reliable recognition

RCVS – Royal College of Veterinary Surgeons (United Kingdom)

RQF – Regulated Qualifications Framework (United Kingdom)

SCQF – Comprehensive credit and qualifications framework (United Kingdom)

SKVC – Centre for Quality Assessment in Higher Education (Lithuania)

UNESCO – United Nations Educational, Scientific and Cultural Organization

WRL – World Reference Levels

VET – vocational education and training



Introduction

From 2018 to 2020, the Erasmus+ programme Key Action 3 NARIC project “Comparing qualifications for reliable recognition” (QUATREC) was carried out. The project aimed at encouraging the use of learning outcomes in credential evaluation to improve recognition in line with existing and emerging qualifications frameworks. The study conducted in terms of QUATREC project illustrated good practice examples, and recommendations were elaborated on how learning outcomes (LO) and national qualifications frameworks (NQF) may be used during the recognition of qualifications.

Considering the conclusions of the first QUATREC project, a follow-up project was developed from 2020 to 2022: Comparing qualifications for reliable recognition 2 (QUATREC 2). This project was launched with the aim to facilitate the efficient use of learning outcomes in credential evaluation among higher education institutions and employers to support a fair recognition. The main objective of the QUATREC 2 project was to elaborate and pilot recommendations for the use of learning outcomes in credential evaluation on the basis of a desk study and the previous QUATREC project conclusions and recommendations.

In order to achieve this aim, legal framework, quality assurance practices and good practice examples were compiled from the QUATREC 2 partner countries – Armenia, Bulgaria, Latvia, Lithuania, Romania and the United Kingdom. Furthermore, results from the first QUATREC project and other initiatives were explored in order to provide a broader perspective concerning the comparison of qualifications. The information was gathered and analysed in order to define recommendations for comparing learning outcomes of qualifications in terms of recognition.

The previous studies (e.g. QUATREC) indicate that ENIC/NARIC offices (to some extent) use learning outcomes in order to recognise qualifications. Absence of learning outcomes can compromise the recognition process, especially in cases of partial recognition. For example, in cases of refugees, qualifications can be partially recognised if some documents are available, thus qualification could be partially recognised based on learning outcomes indicated in the diploma supplement if the diploma itself is missing.¹

The QUATREC 2 project partners are the ENIC/NARIC offices from Latvia (Academic Information Centre – project coordinator), Bulgaria (National Centre for Information and Documentation), Lithuania (Centre for Quality Assessment in Higher Education), Romania (National Centre for Recognition and Equivalence of Diplomas), the United Kingdom (UK ENIC) and Armenian ENIC office (National Information Center for Academic Recognition and Mobility), as well as a higher education institution (HEI) from Lithuania (Vytautas Magnus University). The HEI was included in the project consortium to strengthen cooperation between ENIC/NARIC centres and higher education sector as regards recognition issues.

The report is divided into three chapters. The first chapter compiles information about other initiatives and projects in terms of comparison of qualifications. The second chapter comprises the methodology of the study. The third chapter provides the comparison and analyses of individual country report results.

The report also includes recommendations, elaborated during the project, for comparing learning outcomes of qualifications in the context of recognition. The recommendations impart some good practice examples to illustrate the use of learning outcomes.

The recommendations provided in the report may serve as a guide for comparing learning outcomes for not only HEIs, but also other types of education institutions. The recommendations provided for comparing learning outcomes and qualifications would be useful for ENIC/NARIC offices, HEIs and any other stakeholders.

1 EAR Manual: standards and guidelines on recognition. <http://ear.enic-naric.net/emanual/Chapter12/default.aspx>.



Chapter 1. Review of current initiatives on comparison of qualifications

The mobility among European countries and the world and lifelong learning are in the focus of European and national level policy documents. As a result, various mechanisms, tools and initiatives have been implemented to support political priorities. For example, the European Skills Agenda (2016) set up or strengthened the list of mobility tools, e.g. European Qualifications Framework, Europass. The tools of the Bologna Process (NQFs, ECTS, DS, quality assurance, and learning outcomes) foster mobility and transparency of qualifications, which is another priority of the European Skills Agenda (2016) – making skills and qualifications visible and comparable.² The new European Skills Agenda (2020)³ also emphasises the importance of mobility and the use of the Europass Platform in order to showcase skills and qualifications. The document highlights the use of learning outcomes, especially in the context of micro-credentials in all levels of education.

These initiatives and tools provide general guidance and direction, but for case-by-case comparison of qualifications more evidence and practical recommendations are necessary. The project team is aware that learning outcomes are important part of qualifications and embrace the tradition and national approach towards education, which cannot be limited to a certain international standard. The content and publication of learning outcomes may be considered a sensitive issue depending on national legislation as authorship and ownership rights have to be taken into account. The mentioned aspects may create additional challenges for credential evaluators, since learning outcomes of qualifications vary not only by countries, but also by HEIs. Therefore, some tools for comparison of learning outcomes should be ensured to promote fair recognition of qualifications.

The European Commission launched a new Europass Platform in 2020 that integrated, among other tools, comparison of NQFs, which allows to compare the qualifications of 26 EU and four non-EU countries (Norway, Serbia, Switzerland, and Turkey). This tool provides the option to compare level descriptors of NQFs from two countries; it also includes a few examples of qualifications. The Europass Platform imparts data from national qualification databases (previously Learning Opportunities and Qualifications portal (LOQ)). The content of the platform is still being completed and improved, but currently the tool allows users to compare two NQFs from Belgium (French and Flemish community), the Czech Republic, France, Greece, Estonia, Ireland, Iceland, Latvia, Lithuania, Malta, the Netherlands, Poland, Portugal, Serbia, Slovenia, Turkey, Hungary, Germany and Sweden. The portal does not include all qualifications from all the European countries, and information on qualifications is provided in national languages, which hinders transparent comparison of qualifications. Basically, the comparison tool on the Europass Platform provides users the opportunity to individually perform content analysis of learning outcomes (if they have command of certain languages and possess relevant data processing skills). Yet the platform is useful tool in fostering transparency of qualifications as regards other characteristics of qualifications.

The project team did not find a well-established and widely used tool, neither globally nor at the European level, to compare learning outcomes of qualifications of different countries. Therefore, during the QUATREC 2 project, other initiatives and projects were explored to gather examples of good practice and learn about experiences as regards comparison of learning outcomes.

One of the main aims of QUATREC 2 project is to provide recommendations for comparison of qualifications; therefore, research was done to find out what activities have been implemented in order to facilitate the comparison of qualifications. Below are outlined some examples of practical exercises to improve the comparison of qualifications for all the stakeholders.

2 European Commission (2016). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A new skills agenda for Europe. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0381&from=EN>.

3 European Commission (2020). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. European Skills Agenda for sustainable competitiveness, social fairness and resilience. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0274&from=EN>.



1.1 UNESCO World Reference Levels

In 2014, UNESCO developed the World Reference Levels (WRL) tool⁴, which facilitates international comparison of learning outcomes. The tool helps authorities, institutions, employers and individuals to understand, compare and recognise skills, qualifications, credentials and learning achievements.⁵

In WRL tool, users can analyse the learning outcomes of qualifications according to 11 elements of capability or competence. The tool includes eight stages of progression and definitions of 51 key indicators of progression.

The tool has 11 elements of capability which are divided into three overlapping groups:

Accountabilities: carrying out and mapping activities:

1. Scope and nature of **activities**;
2. Scope and nature of **responsibilities**;
3. Role in **working with others**;
4. Role in monitoring performance and learning to improve **quality**;

Capacities: using skills, knowledge and know-how:

5. Scope and nature of **skills and procedures**;
6. Scope and nature of skills in **communication**;
7. Scope and nature of skills for accessing and using **data**;
8. Scope and nature of **knowledge and know-how**;

Contingencies: responding to contextual factors:

9. The nature of **contexts** of activity;
10. Role in addressing **problems and issues**;
11. Role in addressing issues relating to **values**.⁶

Each WRL element consists of four broad hierarchical reference levels A, B, C and D, which each includes a lower and higher stage of progression (e.g. A1 and A2), with D2 being the highest and A1 being the lowest stage. The WRL tool was made to increase the comparability and transparency of different qualifications across different systems and countries.

The WRL tool was also used to compare qualifications for the first QUATREC project⁷. After the profiling of all the three qualifications (one EQF level 6 and two EQF level 7 qualifications awarded in the project partner countries), the conclusions were made that for the Bachelor's degree in Physics clearly lower reference levels on average were indicated comparing to the both Master's degree qualifications. Thus, the higher level of education, the higher reference levels accordingly for the each WRL element, since the descriptions of the learning outcomes typically for Master's degree are more complex and specific. Thus, the WRL tool is a valuable instrument providing overarching reference points for comparison of qualifications, yet the user of the tool has to make decision on how to mark statements of learning outcomes in each category and wording of instructions may be considered rather specific.

4 The link to the online WRL tool not functional at the time of publication (September 2022). More information about the tool: UNESCO (2019). World Reference Levels. <https://unesdoc.unesco.org/ark:/48223/pf0000371395>.

5 UNESCO (2019). World Reference Levels. <https://unesdoc.unesco.org/ark:/48223/pf0000371395>.

6 The link to the online WRL tool and supporting documents not functional at the time of publication (September 2022). More information about the tool: UNESCO (2019). World Reference Levels. <https://unesdoc.unesco.org/ark:/48223/pf0000371395>.

7 For more information see "Comparative study report – Comparing Qualifications for Reliable Recognition". http://www.aic.lv/portal/content/files/QUATREC_report.pdf.



1.2 Horizontal comparison of qualifications carried out by EQF Advisory Group

The issue of comparing learning outcomes has been on the agenda of the EQF Advisory Group, which was set up by the European Commission to facilitate the implementation of the Recommendation of the European Parliament and of the European Council on the establishment of the EQF for lifelong learning (April 2008). The EQF Advisory Group arranged the Horizontal Comparison project group (2019-2021) consisting of representatives from Belgium, Latvia, Slovakia, Poland, Business Europe, external expert from Luxembourg, Cedefop and the European Commission to conduct an exercise of comparing qualifications between the project group countries. This project group considered the results of Horizontal comparison pilot group (2016-2017), in which representatives from Poland (coordinator), Hungary, Italy, Latvia, Norway, Sweden, United Kingdom (Scotland) as well as European Trade Union Confederation, Business Europe and SME United (formerly European Association of Craft, Small and Medium-sized Enterprises (UEAPME)) were involved.

The aim of the 2019-2021 project⁸ was to explore how contextual factors and learning outcomes descriptions can be systematically analysed to improve comparison of qualifications. The qualifications were compared for the purposes of referencing them to NQF and consequently to the EQF, as well as for further developing and deepening the methodology of analysing learning outcomes for continuous use outside of the working group where the methodology was developed.

For the qualification comparison the project group agreed on two sectors – Information Technologies and Social Care where qualifications of EQF levels 4, 5 and 6 if available in the project group countries were selected for both sectors. In total, 32 qualifications were selected for further analysis. The qualifications were compared considering their learning outcomes and contextual factors: titles of qualifications, development, access requirements, delivery mode and purpose of the qualification in the education and labour market, international education standards, awarding/competent body, assessment of learner and quality assurance.

In order to compare qualifications for the study, the fiche elaborated during the project pilot was improved to collect data on qualifications (contextual information and learning outcomes) and two-step analytical framework of LOs was implemented. The new fiche contained the following fields:

1. Title of the qualification (official and English);
2. NQF and EQF levels;
3. Summary of the qualification;
4. Development, updating, renewal;
5. Context information:
 - 5.1. Access requirements;
 - 5.2. Delivery mode of the qualification;
 - 5.3. Purpose of the qualification in education and training;
 - 5.4. Purpose of the qualification in the labour market;
 - 5.5. International standards (if applicable);
 - 5.6. Competent/awarding/certifying body;
 - 5.7. Assessment of student/learner;
 - 5.8. Quality assurance;
 - 5.9. Information on the hierarchy of national official documents describing qualifications;
 - 5.10. Other relevant context information (if any).

8 Bonte, S., Dillen, V., Kinta, G., Ľubica, G., Noesen, J., Pathóová, I., Ramina, B., Rutkovska, S., Trawińska-Konador, K., Wang, A. (2021). Report of the EQF Advisory Group project group on Horizontal comparison of qualifications. Brussels: Directorate-General for Employment, Social Affairs and Inclusion (unpublished).



6. Extract or full text of learning outcomes describing the qualification;
7. Analysis of the organisation of the learning outcomes:
 - 7.1. Definition and description of the learning outcomes;
 - 7.2. Strengths and weakness of the particular approach.
8. Alignment between learning outcomes and NQF level descriptor;
9. Method of allocating levels to qualifications.

When filling out the fiche, source of information was indicated.

After the countries had completed their fiches, comparison of qualifications was carried out by an external research company and discussed within the group. The qualifications were compared considering their similarities and dividing the analysis into two steps:

1. the analysis of each qualification separately, and
2. the comparative analysis across the qualifications, fields, and levels.

The grid for the analysis of the individual statements of learning outcomes was developed. The following questions were formulated to analyse each statement of learning outcomes:

- The statement presents the qualification from the perspective of the learner and what he/she is expected to know, be able to do and understand?
- The statement uses action verbs to signal the level of learning expected.
- Action verbs can be shown to refer to a taxonomy like e.g., EQF, Bloom's taxonomy or another reference point (which?).
- There is (explicit or implicit) reference to the levels of the national qualifications framework and/or the EQF.
- The statement indicates 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 domains as defined by NQFs/EQF.
- The statement clarifies the occupational and/or social and/or educational context in which the qualification operates.

The grid required to fill in the fields: "Yes", "No", "Examples" and "Comments".

Thus, the analysis conducted by the project group was one of the most detailed comparisons of the use of learning outcomes for defining, describing and comparing qualifications at the EU level. The analysis illustrated the potential of learning outcomes for better understanding the similarities and differences between national qualifications. Although the comparison of learning outcomes relied on personal skills and interpretation of researchers, the methodology (fiche and framework for comparing qualifications) can be used in similar projects. The fiche allows to gather, systematically describe and analyse contextual factors and learning outcomes.

The study concluded that a comparison between qualifications has proven to be easier when information on learning outcomes is structured according to the NQF/EQF domains and reflects the level descriptors or follow a common structure for describing learning outcome across levels. In addition, qualifications should not be seen as the sum of learning outcomes. Contextual factors should be made visible and considered when comparing qualifications.

The methodological approach developed in the project is useful to get insights into the comparison of learning outcomes and make their diversity visible. However, the methodology entails a complex and resource-demanding process, and cannot be made automatic or partly automatic.



1.3 Cedefop's study “Comparing Vocational Education and Training Qualifications: towards a European Comparative Methodology”

To gain insight into the similarities and differences between countries regarding the content and profile of their vocational education and training (VET) qualifications, Cedefop carried out a pilot study comparing 10 vocational education and training qualifications between 2015 and 2017. For the pilot study a methodology was developed and further tested in cooperation with the European Training Foundation and UNESCO where four of the 10 original qualifications were compared in 26 countries⁹.

Afterwards, in 2018 the next project was started: “Comparing VET Qualifications: towards a European Comparative Methodology”. The following occupational profiles were used for analysis: healthcare assistant and information and communications service technician. The qualifications were selected from EQF levels 3 and 4 with one exception with EQF level 5.

In order to explore key sources for data on national qualifications and qualifications databases in the ten countries covered by this study, first step was to introduce a set of criteria or conditions that need to be in place to support comparison. Based on these criteria, a template for collecting information on the following aspects was developed:

- “Reference documents” presenting qualifications and their learning outcomes (information availability and where to find it, descriptions of learning outcomes of initial VET qualifications, infrastructure behind the description and storage of initial vocational education and training qualification information);
- National qualifications databases (descriptions of learning outcomes of initial VET qualifications included in the database, technical infrastructure).

The template also includes a section on tools for comparing learning outcomes of qualifications at national level to examine whether digital tools are already available that can be used to support the automated collection, structuring and analysis of qualifications data. The template was completed by country researchers, mainly based on desk research. In addition, expert interviews were conducted to validate the results and/or fill information gaps.

For qualitative comparison a Vocational Qualification Transfer System Competence Matrix was used which was developed by European Union project “HealthCareEurope” (HCEU)¹⁰. A conclusion was made that the Competence Matrix is very good at differentiating competence areas and higher and lower level abilities. However, this makes the mapping process more time-consuming and requires deeper expertise related to these work processes.

The project was divided into four separate but interlinked themes:

- Exploring and testing a reference point for VET comparison¹¹;
- Exploring, gathering and analysing national qualifications data¹²;
- Analysing the feed-back loop between education and training and the labour market¹³;
- Synthesis report.

9 Cedefop (2019). Comparing VET qualifications. <https://www.cedefop.europa.eu/en/projects/comparing-vet-qualifications>.

10 “HealthCareEurope”. <https://www.project-hceu.eu/index.php?id=3>.

11 Cedefop (2019). Comparing Vocational Education and Training Qualifications: towards a European Comparative Methodology. Draft Final Report. https://www.cedefop.europa.eu/files/exploring_and_testing_a_reference_point_for_vet_comparison_-_comparing_vet_qualifications_wa_1_draft_final_report_june_2019.pdf.

12 Cedefop (2019). Comparing Vocational Education and Training Qualifications: towards a European Comparative Methodology. Work Assignment 2: Exploring, gathering and analysing national qualifications data. Draft Final Report. https://www.cedefop.europa.eu/files/exploring_gathering_and_analysing_national_qualifications_data_-_comparing_vet_qualifications_wa_2_draft_final_report_october_2019_v.03.pdf.

13 Cedefop (2021). Review and renewal of qualifications. Towards methodologies for analysing and comparing learning outcomes. Research paper. <https://www.cedefop.europa.eu/en/publications/5582>.



The study for the first three themes is mostly complete (links to reports available in the references) and the fourth is under development.

A conclusion was made that national data on qualifications is described in text that can, in theory, be gathered, structured and analysed through automated processes. These automated processes could support the comparison of qualifications and potentially reduce the human workload in comparing qualifications. The research team did not fully succeed in establishing an operational system for an automated comparison of qualifications. In the process, however, an in-depth understanding was gained of the fundamental obstacles for completing this process. Two main obstacles were discovered:

- Too little qualification data is available for the training of an automated system.
- The national qualification descriptions and the selected reference points differ too much to allow sensible matching based on automated process.

Although the results of this study cannot be directly used for the purpose of QUATREC 2 project, the gained experience emphasises that comparison of learning outcomes should rely more on qualitative data processing methods.

1.4 Erasmus+ project “Comparing Qualifications for Reliable Recognition (QUATREC)”

QUATREC project (2018-2020) aimed to encourage the use of learning outcomes in credential evaluation for improved recognition in line with existing and emerging qualifications frameworks.

The project partners were the ENIC/NARIC offices from Latvia (Academic Information Centre – project coordinator), Bulgaria (National Centre for Information and Documentation, NACID), Estonia (Archimedes Foundation), and the United Kingdom (UK NARIC) and Armenian ENIC office (National Information Center for Academic Recognition and Mobility, ARMENIC). The comparative report and other materials are available on the website of AIC¹⁴.

A horizontal comparison was carried out to explore three higher education qualifications (qualifications awarded in the project partner countries) – Bachelor’s degree in Physics (EQF level 6), Master’s degree in Psychology (EQF level 7) and Master’s degree in Business Administration (EQF level 7) and to find out whether these qualifications are similar in all the partner countries and may be recognised automatically between the project countries.

A fiche was adopted which includes the following main categories:

- Title of qualification;
- Level of NQF/EQF;
- Information about studies leading to the qualification;
- Formal rights;
- Information about awarding institution;
- Information about Diploma Supplement;
- Information about quality assurance;
- Information about learning outcomes;
- Learning outcomes as defined by qualification authority.

The methodology for analysing the results of the fiches was elaborated. The analysis of qualifications regarding the structure of the fiche was split into two parts:

- Analysis of the contextual information of the qualification;
- Analysis of the learning outcomes (quantitative and qualitative).

¹⁴ Green, Z., Harutyunyan, G., Kinta, G., Lācis, M., Ramiņa, B., Tonev, K., Vaht, G., Walden, J. (2020). Comparing Qualifications for Reliable Recognition. Comparative study report. Latvia: Academic Information Centre. http://www.aic.lv/portal/content/files/QUATREC_report.pdf.



In the quantitative analysis the exact number of learning outcomes (including their length and extent of detail) was investigated and compared between the partner countries for every qualification. Furthermore, the quantitative analysis was focused on the frequency of words in the learning outcomes. This exercise was carried out with the help of a free software AntConc toolkit developed by Dr Anthony Laurence¹⁵. AntConc is a freeware, multiplatform tool for corpus linguistic research, for comparing and analysing texts, for the purposes of the study two tools were used – word list tool and concordance tool. Using the AntConc toolkit allowed making conclusions about how concepts are commonly used in the learning outcomes, identifying the common expressions and frequency of the most used words and compare them with the keyword list.

The qualitative analysis of the learning outcomes imparted several steps and use of various tools, which mostly relied on the content analysis. The first, the learning outcomes were broken down into two categories: 1) generic, i.e. referring to transversal, soft or social knowledge, skills or competences; and 2) specific, i.e. those learning outcomes that could be related to the particular field or subject of qualifications. This approach allowed drawing conclusions in which countries learning outcomes focus more on specific knowledge, skills and competences relevant to the future occupation and in which countries the learning outcomes are described in more general way.

The second, the learning outcomes were grouped by topic, which was considered to be one of the most important parts of the study. The grouping was done by drafting a list of keywords used in learning outcomes statements. The keywords were selected with a reference to the most frequently used dimensions of learning outcomes (knowledge, skills and competences) and concepts associated with them. The other source was Council Recommendation of 22 May 2018 on key competences for lifelong learning¹⁶ (2018) providing the list of eight key competences. Thereafter, the keywords were used to find similar learning outcomes for each qualification in all partner countries, and then all the learning outcomes that were similar were grouped by a specific topic. Arranging learning outcomes by topic allowed structuring information to provide a basis for the in-depth analysis of the content of qualification.

The potential groups of the learning outcomes were further analysed using the software AntConc toolkit. In this part of the study, commonly used phrases were analysed to determine similarities and differences in the phrasing and content of the learning outcomes. The use of a tool assisted in increasing the objectivity of the results of analysis.

The third, additional content analysis of the learning outcomes was done with the online WRL tool¹⁷ developed by UNESCO (see more information above).

After the quantitative and qualitative analysis of the learning outcomes, the following conclusions were drawn regarding the comparison tools and methods:

- Each research method revealed a different perspective of the learning outcomes and depending on the objective of the study, particular method should be selected.
- The quantitative analysis methods and the AntConc toolkit to some extent could be used for the same purposes in regards to the exact length and the amount of the learning outcomes. The tool allows determining whether the learning outcomes of qualifications are comparable between the partner countries in terms of the length and the amount of learning outcomes.
- The grouping of the learning outcomes and UNESCO WRL tool could be more suitable for analysing the content of the learning outcomes, because in both methods the focus is on the exact content of the learning outcomes.

The results of study allowed making assumptions that in the case of social sciences formulating

15 Laurence, A. (2019). Website. <https://www.laurenceanthony.net>.

16 Council of Europe (2018). Council Recommendation of 22 May 2018 on key competences for lifelong learning. 2018/C 189/01. [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&from=EN).

17 The link to the online WRL tool and supporting documents not functional at the time of publication (September 2022). More information about the tool: UNESCO (2019). World Reference Levels. <https://unesdoc.unesco.org/ark:/48223/pf00000371395>.



more precise and well-structured learning outcomes seems to be easier exercise compared to the fields of science, technology, engineering and mathematics. Yet in order to have more evidence and draw more general conclusions, the analysis of other qualification examples from various fields (e.g. engineering, applied sciences, arts and humanities) should be conducted. However, both qualitative and quantitative analysis methods have to be used to ensure a thorough understanding as to whether the learning outcomes of qualifications are comparable.

Regarding the automation recognition of the qualifications, conclusions were drawn that following the analysis of the learning outcomes of the Master's degree in Business Administration, the qualification could be automatically recognised between all the partner countries. Whereas the learning outcomes of the Bachelor's degree in Physics and the Master's degree in Psychology in terms of the content are more heterogeneous creating more interpretation and discussions about possibility to have an automatic recognition of these qualifications between the partner countries.



Chapter 2. Methodology of the study

Following the agreement among the project working group and considering national characteristics of education systems, this study focuses on learning outcomes of higher education qualifications at European Qualifications Framework (EQF) levels 6 and 7. The qualifications of EQF level 8 were not explored in the project.

The aim of the study is to develop recommendations for comparing learning outcomes in terms of recognition, in order to improve both the formulation of learning outcomes for higher education institutions (HEIs) and to improve comparability of qualifications among diploma recognition experts, employers and other stakeholders.

The project partners representing ENIC/NARIC offices prepared Country Chapters for their countries (see Annex 1), which included the following topics:

- Legal framework for learning outcomes in higher education;
- Categories/dimensions in which learning outcomes are expressed;
- Whether learning outcomes are subject to quality assurance and how are they assessed;
- Indication of learning outcomes of the study programmes Diploma Supplement;
- Recommendations, guidelines, set procedures for writing learning outcomes (at national and HEI level);
- Formulation of learning outcomes (at national and HEI level);
- Good practice example of learning outcomes;
- Labour market involvement in the development and use of learning outcomes.

The Country Chapters were completed on basis of data collected during desk research and surveys of HEIs (see Annex 2). The template of Country Chapters and questionnaire of HEI (in English) was elaborated by the project coordinator and discussed and approved by the project working group. The survey of HEIs was used to answer several questions set in the Country Chapters. The questionnaire was translated into respective national languages by the project partners (where applicable) in order to ensure larger response rate. The survey of HEIs was carried out online at national level by project partners representing ENIC/NARIC offices.

The desk research was carried out by the project partners to collect the information about legal framework of learning outcomes, categories/dimensions in which learning outcomes are expressed, quality assurance procedures regarding the use of learning outcomes, indication of learning outcomes in the Diploma Supplement, recommendations/set procedures for writing learning outcomes at national level, in order to find out how learning outcomes are formulated and assessed in each partner country.

The survey of HEIs was conducted with the aim to find out how learning outcomes are formulated and assessed in HEIs, and discover good practice examples for the formulation of learning outcomes. The questionnaire consisted of 11 questions exploring the succeeding issues:

- whether the respondents have specific guidelines/recommendations for formulation of learning outcomes;
- whether any procedures for writing learning outcomes are set in their HEIs;
- what categories/dimensions are used to express learning outcomes;
- number of learning outcomes used;
- how learning outcomes are assessed in their study programmes;
- whether NQF/EQF level descriptors are used to formulate learning outcomes;
- how learning outcomes are used in the quality assurance process;
- the involvement of labour market in the development of learning outcomes;



- whether training is provided for academic staff to improve formulation of learning outcomes;
- their good practice examples of well-formulated learning outcomes.

In total, 75 respondents participated in the survey: 14 responses were received from Armenia; six – from Bulgaria; 39 – from Latvia; eight – from Lithuania and eight – from Romania. No responses were collected from the United Kingdom as none of the HEIs responded to the invitation to participate in the survey. Therefore, desk research was carried out instead to fill in the rest of the Country Chapter.

The data collection in all the partner countries was carried out from 1 April to 24 May 2021.

The data from all the Country Chapters was collected, compared and analysed to draw conclusions for this report in order to provide recommendations for formulation and comparison of learning outcomes. In addition, other information sources (legal documents, published reports, draft reports) were explored in order to improve the recommendations which were drawn up from Country Chapter comparison and the first QUATREC project results¹⁸.

18 Green, Z., Harutyunyan, G., Kinta, G., Lācis, M., Ramiņa, B., Tonev, K., Vaht, G., Walden, J. (2020). Comparing Qualifications for Reliable Recognition. Comparative study report. Latvia: Academic Information Centre. http://www.aic.lv/portal/content/files/QUATREC_report.pdf.



Chapter 3. Comparison of Country Chapters

This chapter summarises information about the legal framework, quality assurance and good practice examples for learning outcomes of higher education qualifications in Armenia, Bulgaria, Latvia, Lithuania, Romania and the United Kingdom. In order to display the importance of learning outcomes in different legal frameworks, other laws and methodological documents are described which are related to the use and formulation of learning outcomes at national level.

The legal framework was compared in order to understand the rationale of developing, using and assessing learning outcomes in higher education of the project partner countries. In addition, quality assurance practices were analysed in order to determine to what extent learning outcomes are taken into account during the quality assurance procedures. Finally, good practice examples were explored in order to develop recommendations for formulation of learning outcomes in terms of recognition.

3.1 Legal framework and general use of learning outcomes

In order to find out whether all partner countries have legal frameworks which stipulate the use of learning outcomes for study programmes, desk research was carried out by the project partners in their own countries.

From the partner countries, only Armenia and the United Kingdom do not have national laws which stipulate that learning outcomes must be formulated for HE study programmes. Laws and regulation in other partner countries state that learning outcomes have to be formulated for study programmes, but in none of these cases the laws and regulations specify how learning outcomes should be formulated. The regulations concerning the learning outcomes in HE are stipulated by the following laws in the project countries:

- in Bulgaria, the Higher Education Act¹⁹ regulates the structure, functions, management, financing and organisation of higher education in Bulgaria, while the National Qualifications Framework²⁰ and Ordinance on the state requirements for acquiring the degrees “Specialist”, “Bachelor” degree and “Master”²¹ specify in a complementary way at national level the expected learning outcomes as a set of knowledge, skills and competences for the existing degrees of higher education in Bulgaria;
- in Latvia, the Law on Higher Education Institutions²² regulates the legal grounds for the activities of HEIs, and determine and protect the autonomy of HEIs;
- in Lithuania, the Law on Science and Higher Education²³ establishes the state regulation and principles of quality assurance in higher education and research, legal grounds for the activities of HEIs, organisation and supervision of their activities, as well as funding of higher education and research;
- in Romania, the Law of National Education No 1/2011²⁴ regulates the structure, functions, organisation and functioning of higher education, also protecting the autonomy of HEIs.

All the partner countries have other laws and regulations which are related to learning outcomes, for example, laws and regulations on NQFs. The information on legal frameworks in the partner countries is summarised in the Table 1 below.

19 National Assembly (2022). Higher Education Act. https://www.neaa.government.bg/images/files/zkn_VO_izm25022020_6.pdf.

20 The National Qualifications Framework of the Republic of Bulgaria. <https://www.navet.government.bg/bg/natsionalna-kvalifikatsionna-ramka>.

21 The Council of Ministers (2002). Ordinance on the state requirements for acquiring the degrees “Specialist”, “Bachelor” degree and “Master”. <https://www.neaa.government.bg/images/files/naredba-01.pdf>.

22 Saeima (1995). Law on Higher Education Institutions. <https://likumi.lv/ta/id/37967-augstskolu-likums>.

23 Seimas of the Republic of Lithuania (2009). Law on Science and Higher Education. <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/548a2a30ead611e59b76f36d7fa634f8>.

24 The Romanian Parliament (2011). Law of National Education No 1/2011. https://www.edu.ro/sites/default/files/_f%C8%99iere/Legislatie/2020/LEN_actualizata_octombrie_2020.pdf.


Table 1. Comparison of legal framework in each partner country

Country	Laws stipulating the use of LO	The use of DS	Inclusion of LOs in the DS	Dimensions of LOs
Armenia	N/A	Yes	Yes	<ul style="list-style-type: none"> ➤ knowledge ➤ skills ➤ competence
Bulgaria	Higher Education Act, the National Qualifications Framework and the Ordinance on the state requirements for acquiring the degrees “Specialist”, “Bachelor” degree and “Master”	Yes	No	<ul style="list-style-type: none"> ➤ knowledge ➤ skills ➤ competences ➤ (personal and professional)
Latvia	Law on Higher Education Institutions	Yes	Yes	<ul style="list-style-type: none"> ➤ knowledge ➤ skills ➤ competences
Lithuania	Law on Science and Higher Education	Yes	Yes	<ul style="list-style-type: none"> ➤ knowledge and its application ➤ research skills ➤ special abilities ➤ social abilities ➤ personal abilities
Romania	Law of National Education No 1/2011	Yes	Yes	<ul style="list-style-type: none"> ➤ knowledge ➤ skills ➤ competences
UK – England and Northern Ireland	N/A	Issued by few HEIs	Not always	<ul style="list-style-type: none"> ➤ knowledge and understanding ➤ skills
UK – Scotland	N/A	Issued by few HEIs	Not always	<ul style="list-style-type: none"> ➤ knowledge and understanding ➤ practice: applied knowledge, skills and understanding ➤ generic cognitive skills ➤ communication numeracy and ICT skills ➤ autonomy, accountability and working with others
UK – Wales	N/A	Issued by few HEIs	Not always	<ul style="list-style-type: none"> ➤ knowledge and understanding ➤ application and action ➤ autonomy and accountability



Since the national legislation does not specify how learning outcomes should be formulated, the methodology is left under responsibility of HEIs. Therefore, learning outcomes may be structured very differently among HEIs not only at international level, but also in the same country.

The next topic explored in the Country Chapters was related to one of the Bologna Process tools – Diploma Supplement (DS), which includes significant information necessary for recognition. The one of QUATREC conclusions was that for facilitating the automatic recognition of HE qualifications, Diploma Supplement (according to the model developed by the European Commission, Council of Europe and UNESCO/CEPES) should be issued. In Armenia, Latvia, Lithuania and Romania, DS is issued and learning outcomes are indicated in the document for HE qualifications. In Armenia, Latvia, Lithuania and Romania, the DS is issued in both national language and in English. In the United Kingdom, the DS is not mandatory and issued by a very few HEIs. Not all HEIs in the United Kingdom, which issue the Diploma Supplement, indicate learning outcomes in them. Some HEIs in the United Kingdom prefer to issue Higher Education Achievement Report²⁵ instead. In Bulgaria, DS is issued, but learning outcomes are not indicated. Yet they contain the results of the successfully taken exams of the graduate, expressed in marks and ECTS credits.

In the context of EQF, learning outcomes are expressed in three dimensions – knowledge, skills and competences (2008) or authority and autonomy (2017); therefore, in this study structure of learning outcomes in the partner countries was explored. Nationally, categories/dimensions in which learning outcomes are expressed are similar in most partner countries while they quite differ in others. In Armenia, Bulgaria, Latvia and Romania learning outcomes are expressed as knowledge, skills and competences. Though, in Armenia, the word “competence” is used in singular not plural, unlike in other countries mentioned before. Additionally, in Bulgaria, competences are expressed as personal and professional. In Lithuania, learning outcomes are expressed in knowledge and its application, research skills, special abilities, social abilities and personal abilities. In the United Kingdom, the dimensions of learning outcomes vary by the existing NQFs:

- England and Northern Ireland – Regulated Qualifications Framework (RQF) – learning outcomes are expressed as knowledge and understanding, and skills.
- Scotland – Comprehensive credit and qualifications framework (SCQF) – learning outcomes are expressed as knowledge and understanding; practice: applied knowledge, skills and understanding; generic cognitive skills; communication, numeracy and information and communication technology skills and autonomy, accountability and working with others.
- Wales – Credit and qualifications framework of Wales (CQFW)²⁶ – learning outcomes (regulated qualifications) are expressed as knowledge and understanding, and skills; learning outcomes (lifelong learning) are expressed as knowledge and understanding; application and action, and autonomy and accountability.

While knowledge and understanding are common in all four devolved nations of the United Kingdom, other level descriptors differ. Although the partner countries at national level use different dimensions of learning outcomes, at level of qualifications the structure of learning outcomes may be different. However, as proven by the first QUATREC project and Cedefop project “Comparing Vocational Education and Training Qualifications: towards a European Comparative Methodology”, these differences are not significant obstacles for the comparison of qualifications.

At HEI level, in all the partner countries most of the HEIs who participated in the HEI survey formulate learning outcomes for their study programmes according to the categories/dimensions of their NQFs. Yet in Romania, some HEIs also express learning outcomes of their programmes through knowledge, skills, responsibility and autonomy, using the definitions of the EQF. In Latvia, almost all surveyed HEIs said that they describe their learning outcomes according to the dimensions expressed in the NQF (knowledge, skills and competences), but only one HEI indicated that they express their learning outcomes in knowledge, comprehension, attribution, communication and general skills. Therefore, a

25 Higher Education Achievement Report website. <http://www.hear.ac.uk>.

26 Cedefop (2019). Overview of National Qualifications Framework Developments in Europe 2019. https://www.cedefop.europa.eu/files/8609_en.pdf.



conclusion can be drawn that not always there is unity of dimensions in which learning outcomes are expressed in a single country, which in turn, may complicate the comparison of learning outcomes. Thus, discussions among HEIs, which use different dimensions to formulate learning outcomes rather than those specified in the NQF, should be organised to agree on common standards.

3.2 HE quality assurance in terms of learning outcomes

The quality assurance (QA) of HE is one of the Bologna Process tools established to foster transparency of qualifications and ensure that certain standards in implementation of HE are met by HEIs. Therefore, the QUATREC 2 project team in terms of desk research and survey of HEIs explored HE quality assurance (QA) procedures of study programmes/directions in the project partner countries. The data from the United Kingdom include the results of desk study, since no replies were received in the survey of HEIs.

Comparison of the QA procedures in the partner countries reveals that assessment of learning outcomes is an important aspect of study programme evaluation procedure for both internal and external quality assurance. Although the QA process differs by the partner country, in all the cases learning outcomes of study programmes are assessed, often involving staff, students, employers etc. Moreover, in the United Kingdom, organisation of QA process differs by England, Wales, Northern Ireland and Scotland, but the review of learning outcomes is equally important QA aspect in all four of the devolved nations.

The internal QA procedures are conducted in the partner countries and they are often done in form of self-assessment reports which explore various aspects of study programmes/directions including their learning outcomes. The external quality assurance is arranged by the respective QA agency or other agency representing EQAR. External experts also consider learning outcomes in the programme/study direction QA process.

In Romania, there are three successive stages in the evaluation of the academic quality:

1. elaboration of the quality self-assessment report by the supplier or institution;
2. external quality assessment;
3. the application of the recommendations resulting from the self-evaluation and the external evaluation and the follow-up by the agency, together with the education institution and/or other competent bodies, of their effective realisation.

The self-assessment report is an official document prepared by the education provider, institution or HEI requesting the provisional operation authorisation of a programme or institution, the accreditation of a programme/field or institution or the periodic external evaluation of QA. The first of the three successive activities of the external evaluation is the analysis of the self-evaluation report by reference to the fields, criteria, standards and performance indicators mentioned in the Evaluation Methodology.

Furthermore, all the partner countries indicated that learning outcomes are regularly reviewed and improved. The frequency of assessment and improvement process may vary by country and study programme within each country. For example, in many HEIs of Latvia, Lithuania and Rumania the assessment is carried out annually. Usually, assessment is carried out by Study Programme/Direction Councils/Committees (Latvia, Lithuania), which consist of students, staff, employers, etc. The survey of HEIs indicated that frequently learning outcomes in the partner countries are reviewed and updated, taking into account labour market trends, changes in legal acts regulating the study and professional environment, proposals of the Study Programme/Field Committees (Lithuania), expectations of employers, etc. In addition, in some cases learning outcomes not only are regularly improved, but also are used to improve study programmes. For example, few respondents from HEIs of Latvia pointed out that study programme director evaluates how learning outcomes of individual courses contribute to the achievement of the learning outcomes of the programme. A respondent provided an example – certain study courses were excluded from the study programme since the learning outcomes of the study courses did not contribute to the learning outcomes of the study programme. Representatives of HEIs also mentioned that learning outcomes are used to improve assessment methods.

**Table 2. Comparison of HE quality assurance practices**

	Armenia	Bulgaria	Latvia	Lithuania	Romania	United Kingdom
LOs are assessed in QA	yes	yes	yes	yes	yes	yes
Assessment of LOs in internal QA	yes	yes	yes	yes	yes	yes
Assessment of LOs in external QA	yes	yes	yes	yes	yes	yes
Autonomy of HEIs	yes	yes	yes	yes	yes	yes
Member of ENQA, QA agency	yes ANQA	yes NEAA	yes AIC	yes SKVC	yes ARACIS	yes BAC OfS QAA RCVS

The survey of HEIs explored how learning outcomes are assessed in order to clarify whether HEIs apply different assessment methods to properly assess learning outcomes. The respondents from Latvia and Lithuania indicated that many evaluation methods were used to assess various learning outcomes. The following assessment methods were named from partner countries: tests, discussions in seminars, open and closed questions, preparation of presentations, project preparation, essay writing, laboratory work, group work, case studies, creative work and thesis. While some of these are study methods, in the survey they were listed under the assessment methods. Results of the HEI survey from Lithuania highlight that assessment rubrics²⁷ are often used to assess learning outcomes. According to the results of survey in Latvia and Rumania, the evaluation of learning outcomes in the study programmes is both summative and formative.

Considering that HEIs are autonomous and no national legal frameworks are set for formulating learning outcomes in the partner countries, formulation and assessment of learning outcomes varies by country and HEI. For example, in the United Kingdom, all HEIs are autonomous and responsible for maintaining their own standards of education. This includes monitoring and reviewing their own programmes to ensure that standards are maintained, which includes the review of learning outcomes. While the procedures of QA differ among England, Wales, Northern Ireland and Scotland, the assessment of learning outcomes is ensured in all the four of the devolved nations by the respective QA agencies.

In addition, all the higher education QA agencies in the partner countries are part of the European Association for Quality Assurance in Higher Education (ENQA), which means they must operate in line with the Standards and guidelines for quality assurance in the European Higher Education Area (ESG). The ESG state that:

- Study programmes should be designed so that they meet the objectives set for them, including the intended learning outcomes.
- Study programmes are designed with overall programme objectives that are in line with the institutional strategy and have explicit intended learning outcomes.
- The assessment allows students to demonstrate the extent to which the intended learning outcomes have been achieved.

²⁷ The assessment rubric is an assessment tool that helps revealing the teacher's expectations and students' work requirements, defines what will be assessed, as well as describes the criteria according to which the assessment will be made.



- Students need to receive documentation explaining the qualification gained, including achieved learning outcomes and the context, level, content and status of the studies that were pursued and successfully completed.
- HEIs publish information about their activities, including the programmes they offer and the selection criteria for them, the intended learning outcomes of these programmes, the qualifications they award, the teaching, learning and assessment procedures used, the pass rates and the learning opportunities available to their students as well as graduate employment information.²⁸
- The HEIs in all partner countries have to follow the ESG, which fosters the transparency of qualifications and promotes mobility of students and graduates.

The internal QA as regards to learning outcomes is ensured by different courses, modules or further development programmes for staff, which provide support and guidance on formulation and assessment of learning outcomes. The survey of HEI clarified whether HEIs provide such training for their staff. The analysis of survey results indicated that many HEIs provide training for writing of learning outcomes for their academic staff. In Armenia, the situation with the staff trainings is rather diverse. Some of HEIs offer a component on writing learning outcomes within other training programmes on teaching, learning and assessment. In Bulgaria, most surveyed HEIs pointed out that they provide training about writing learning outcomes. Some of HEIs in Bulgaria arrange annual trainings of academic and administrative staff. In Latvia, the majority of respondents indicated that their HEIs offer training for writing learning outcomes. Several respondents replied that their HEIs organise professional development seminars on defining learning outcomes. A representative of one HEI in Latvia mentioned that continuing education courses are organised for study programme directors, academic staff, and that the Department of Studies also organises workshops for formulating and mapping learning outcomes. In Lithuania, all surveyed HEIs with one exception, indicated that they provide such training. The trainings usually are provided in form of:

- the development of competences for academic staff,
- special designed course for the staff on the Study Programme Development, including basic training for Development of Didactic Competences,
- workshops for lecturers and member of study programme committees.

Therefore, a conclusion can be drawn that while most surveyed HEIs provide training for their academic staff concerning formulation of learning outcomes, a considerable number of HEIs do not focus on this issue. The project working group highlights that the staff of HEIs dealing with formulation and assessment of learning outcomes should be ensured with guidance and support in order to raise their awareness of importance of clearly written learning outcomes in terms of comparing qualifications in recognition.

3.3 Practical approaches towards formulation of learning outcomes

In order to support preparation of recommendations about formulation of learning outcomes, the survey of HEIs in all the partner countries collected data concerning the practical approaches implemented by the surveyed HEIs towards formulation of learning outcomes. The partner of United Kingdom conducted an in-depth desk study as no responses from HEIs were received in the survey. The collected material was used to illustrate and strengthen the rationale for the recommendations elaborated by the QUATREC 2 project working group.

²⁸ European Association for Quality Assurance in Higher Education, European Students' Union, European University Association, European Association of Institutions in Higher Education (2015). ESG 2015. Standards and Guidelines for Quality Assurance in the European Higher Education Area. https://enqa.eu/wp-content/uploads/2015/11/ESG_2015.pdf.



According to the results of this study, almost all surveyed HEIs in the partner countries have internal documentation for the formulation of learning outcomes. The frequency of review of the documentation varies by country and HEI. For example, some respondents from Latvia mentioned that the documentation is updated several times a year, while some respondents in Lithuania review them annually. In many cases internal documentation for the formulation of learning outcomes is not available for public and for the most part translations into English are not provided. Therefore, the project team cannot discuss the content of the documentation or the scale of its updates.

The results of survey show that the representatives of labour market are highly involved in the formulation of learning outcomes – LOs are often formulated in order to meet the requirements of the labour market. In addition, employers themselves are in some cases directly involved in the formulation of learning outcomes. Only a few respondents of HEI survey indicated that employers are not involved at all in the formulation of learning outcomes. For an instance, according to HEI survey results, in Armenia, employers are not directly engaged in the development of LOs, but they comment on HE study programmes (including learning outcomes) when the study programmes are developed. In Bulgaria, only a few respondents replied that employers were not involved, while in other cases employers took part in developing the academic curricula, consulting about study programmes, etc. In Latvia, when elaborating new study programmes, employers participate in discussions about the desired outcomes, knowledge, skills and competences. In addition, surveys, interviews, consultations with employers are conducted to understand what are current labour market demands; thereafter, on the basis of these studies the concept, content, goal and learning outcomes of the study programme are developed. A similar situation can be observed in Lithuania – social partners from labour market take an active part in the process of planning new study programmes and reviewing the implemented study programmes. Furthermore, feedback is regularly collected from employers to evaluate learning outcomes achieved by graduates. While practices of engaging employers in the development of study programmes differ by countries and HEIs, a lot of common approaches may be observed. Thus, most of the surveyed HEIs try adapting the learning outcomes of their study programmes for LOs to reflect knowledge, skills and competences expected by the labour market.

When formulating learning outcomes, as revealed by the survey of HEIs, each HEI apply different approach:

- the use of different dimensions for learning outcomes than those defined for NQF level descriptors,
- capacity (if any) at which the labour market is involved in the development of study programmes and other approaches,
- the number of learning outcomes used.

However, common principles may be observed among the surveyed HEIs in all the partner countries:

- the reference to EQF/NQF level descriptors,
- the existence of national level legal documents regarding occupational fields, which stipulate certain learning outcomes, EQF level etc. (differ country by country), e.g., occupational standards (Latvia, Romania), Study field descriptors (Lithuania), Subject Benchmark Statements (the United Kingdom),
- taking into account the standards and guidelines of ESG.

Following the results of the study, as the most popular recommendations for the formulation of learning outcomes were mentioned:

- To be clear, concise and specific;
- To use action verbs and begin with the verb describing the ability, describing the action performed by the student;
- Use of verbs: appreciate, evaluate, compare, critically assess;
- To formulate learning outcomes in proportion to the amount of credit points of the study course;

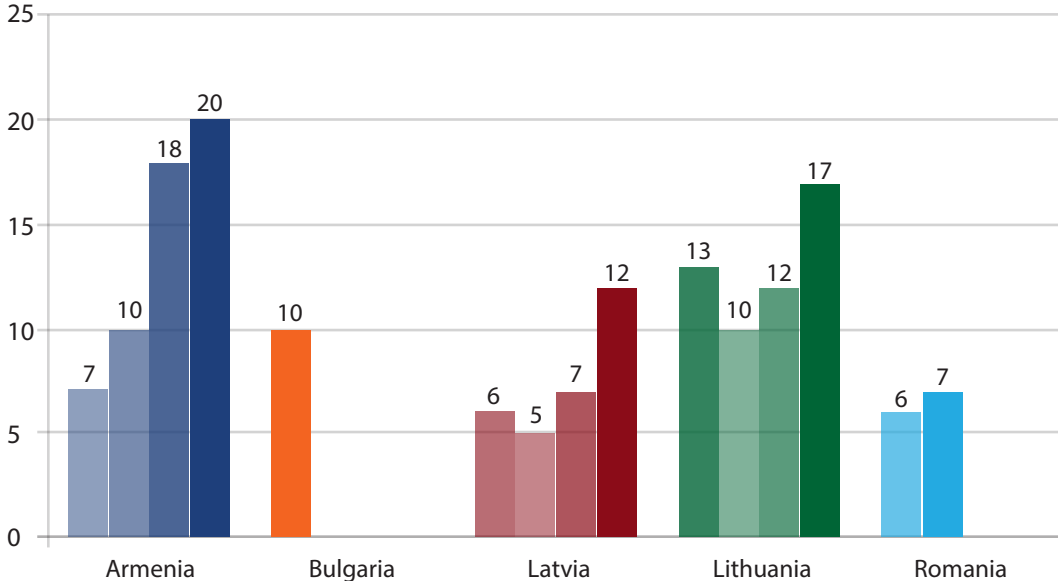


- To be achievable, assessable;
- The volume, nature, and assessment of learning has to be adequate to achieve the outcomes indicated;
- Design of curriculum and assessments is such that all students following the programme can achieve and demonstrate the intended outcomes;
- Need to be realistic about what can students achieve;
- Need to be evaluated, independently recognised (transferability).

The survey of HEIs and desk research tried to find out the average number of learning outcomes used for study programmes in the project partner countries in order to illustrate how the number of learning outcomes used differs by countries and HEIs and to provide recommended number of learning outcomes which should be used for more reliable comparison. The results varied greatly not only by country, but also by surveyed HEI (see Figure 1). The most popular answers by country were:

- Armenia: general learning outcomes are 7-10, subject learning outcomes are 18-20,
- Bulgaria: 10 or more,
- Latvia: 6, 5-7, 7-12,
- Lithuania: 13 is recommended, varies from 10-12 to 12-17 depending on study programmes,
- Romania: 6-7,
- The United Kingdom: no specific numbers given, varies by programmes.

Figure 1. Number of learning outcomes by the partner countries (most popular answers included)



The number of LOs per qualification may be a significant indicator to be considered during the comparison of qualifications. However, the study did not explore the average length or structure of LO statements, which also impacts the content and number of LOs.



3.4 Conclusions about the comparison of Country Chapters

The results of the Country Chapter comparison show that almost all the partner countries (except, Armenia and the United Kingdom) have laws and regulations stipulating that learning outcomes must be used when developing study programmes. However, the legislation in Bulgaria, Latvia, Lithuania, Romania does not specify how learning outcomes should be formulated; thus, the formulation of learning outcomes of HE programmes is under responsibility of HEIs. In this sense the academic freedom and autonomy of HEIs is respected; however, studies of particular qualification examples reveal, e.g. in QUATREC project, that the structure, formulation, content of LOs may be rather varied, which may complicate fair comparison of qualifications. Therefore, staff of HEIs should be provided with more support and guidance about the writing and assessing LOs, for instance, concerning the elements of LOs (e.g., the use of action verbs, compliance with level descriptor dimensions, maximum of learning outcomes to be used, etc.).

HEIs in the partner countries have a functioning internal framework supporting formulation and review of learning outcomes, as well as aligning LOs with the requirements of the labour market. The evaluation of learning outcomes is integrated into internal and external HE quality assurance in all the partner countries. QA agencies in all the partner countries are members of ENQA and operate according to the ESG, which also emphasise the use of learning outcomes, programme objective alignment with learning outcomes, ability to assess learning outcomes, etc. Desk study and survey of HEIs also proved that learning outcomes in HEIs are formulated following the ESG. For example, many respondents of survey pointed out that LOs are formulated in such a way they can be assessed using specific assessment methods. In addition, many respondents in all the partner countries indicated that their HEI regularly review and improve learning outcomes of study programmes based on comments from graduates, staff, employers, etc.

According to the results of survey, almost all surveyed HEIs in the partner countries have internal documentation for the formulation of learning outcomes; thus, common standards are respected within each of these HEIs and their HE study programmes. Almost all HEIs in the partner countries also indicated that they have a close cooperation with employers, which ensures the relevance of study programmes to the labour market and also fosters conformity of learning outcomes with the requirements of the labour market, but still a notable number of HEI representatives admitted that they do not cooperate with the employers in the development of the HE study programmes.

Many of the good practice examples or recommendations provided by the surveyed HEIs were very similar and share common elements: the use of action verbs, ability to assess them, clear, concise, etc. Thus, a common understanding among many representatives of HEIs may be observed on how to formulate learning outcomes in order for LOs to be understandable and comparable, but not always these good examples and recommendations are used in practice.



Recommendations

This chapter provides recommendations on how to formulate learning outcomes as well as how to compare LOs of qualifications from different countries.

The recommendations for formulation of learning outcomes are based on the results of Country Chapter analysis and other good practice examples available publicly.

The recommendations for comparison of learning outcomes are based on the results of this study, the discussions between QUATREC 2 project working group, and results of QUATREC project (2018-2020).

Recommendations for the formulation of learning outcomes in terms of recognition

As the result of Country Report analysis and desk research, several recommendations for formulation of learning outcomes were elaborated. The Country Reports were prepared by the QUATREC 2 project partners to outline situation in their countries. These recommendations are intended for providers who design HE qualifications and design learning outcomes.

For learning outcomes to be comparable, the following principles should be observed:

- Learning outcomes have to be clear, concise, observable and measurable; they need to be specific when expressed in course/module descriptions;
- Use action verbs (preferably only one verb per sentence) and begin with the verb describing the ability, describing the action performed by the student;
- Formulate learning outcomes from the perspective of learner, not teacher (learning outcomes are not teaching objectives);
- Formulate learning outcomes in proportion to the amount of credits of a study course/module;
- Ensure that programme design and delivery, as well as the assessment provides learners the opportunity to achieve and demonstrate the intended learning outcomes.
- Be specific, where appropriate, concerning access to occupations for which the programme is best suited, especially in cases where professional qualification has been awarded and is due to be recognised;
- Cover all categories/dimensions of learning outcomes (e.g. knowledge, skills, functions and competences);
- When writing learning outcomes, try including verbs from various levels (e.g. choose verbs from higher levels to foster learners' personal and academic development) and domains (to ensure development of variety knowledge and skills) of taxonomy taking into account learners' abilities and previous academic experience.

Recommendations for the comparison of learning outcomes

The comparison of learning outcomes requires high level analytical skills, although some attempts have been made to make this exercise automatic using machine reading programmes. The QUATREC 2 project working group elaborated several recommendations for stakeholders (higher education institutions, employers and ENIC/NARIC offices) involved in the credential evaluation willing to establish the value of a qualification through analysis of learning outcomes. The credential evaluation in this document should be regarded in a broad context, i.e. any exercise or situation when stakeholders have to explore the content of a qualification or several qualifications.



The comparison of learning outcomes involves several steps that can be used depending on the purpose of the analysis and other aspects, e.g. available time and resources. Hence, some steps can be omitted or adapted when necessary, but QUATREC 2 project team wished to outline all the relevant exercises for comparison of learning outcomes.

Steps for the comparison of learning outcomes:

1. Gathering and organising information about the comparable qualifications. Please refer to the fiche adapted from the QUATREC project (see Annex 3). The fiche collect data on the following two main aspects:

- a. Contextual information – data concerning the qualification that provide explanation to the format and content of learning outcomes;
- b. Learning outcomes – exact text as formulated by the provider of qualifications.

Purpose of this step – to summarise all the relevant data about the qualification(s) in order to conduct evidence based analysis and objective comparison.

2. Quantitative analysis of learning outcomes focuses on:

- a. number of statements of learning outcomes – background information to clarify the layout, general structure and format of learning outcomes impacting the content of the statements;
- b. length and extent of detail of learning outcomes – additional information about learning outcomes to explain the content and structure of the statements.

Purpose of this step – to conduct initial analysis of the text and provide ground data for the further comparison of learning outcomes.

3. Qualitative or content analysis of learning outcomes refers to:

- a. Grouping learning outcomes by:
 1. generic, i.e. referring to transversal, soft or social knowledge, skills or competences;
 2. specific, i.e. those learning outcomes that could be related to the particular field or subject of qualifications.
- b. Grouping learning outcomes by topics:
 1. list of keywords used in learning outcomes statements;
 2. list of eight key competences.

Purpose of this step – to ensure objective grouping of information and conduct detailed and content-related comparison of learning outcomes according to certain criteria.



4. Reading and comparing by statement or phrase. First, a list of criteria or questions should be set for the analysis considering the context of comparison. The QUATREC 2 has adapted seven questions for this exercise, yet this list may further improved. Then the following questions could be considered about each statement of learning outcomes (mark with “yes” or “no”)²⁹:

- a. The statement presents the qualification from the perspective of the learner and what they are expected to know, be able to do and understand.
- b. The statement uses action verbs to signal the level of complexity of expected learning.
- c. Action verbs may refer to a taxonomy (e.g., EQF, education objective taxonomy) or another reference point (which?).
- d. The statement includes, explicit or implicit, reference to the levels of the NQF and/or the EQF or EHEA-QF cycles.
- e. The statement indicates the object and scope of the expected learning outcomes, whether the description captures the main orientation of the qualification and the depth/breadth of the expected accomplishment.
- f. The statement uses domains as defined by NQFs/EQF or EHEA-QF.
- g. The statement clarifies the occupational and/or social and/or educational context in which the qualification operates.

Purpose of this step – to conduct an in-depth analysis and evaluation of learning outcomes following a certain set of criteria in order to ensure consistent comparison of learning outcomes.

Tools supporting quantitative analysis

The quantitative analysis may be considered as initial or preparatory exercise for the comparison of learning outcomes, which ensures objective evidence for the further analysis of learning outcomes.

New digital technologies can be used for the automated comparison of qualifications. For example, Cedefop developed automated processes in order to compare qualifications. Firstly, a prototype was developed from scratch by building upon these tools – using the insights gained from examples of their application, seen on relevant discussion forums and insights from expert consultations – by tailoring them to fit the proposed workflow (through trial and error), while simultaneously identifying and addressing / resolving issues as they were encountered. After developing a feasible prototype for (parts of) the workflow, with some adaptations, a testing exercise was performed – using the (full) ESCO KSC skills pillar and the learning outcomes descriptions included in the Dutch national documentation for the qualification of ICT service technician – in order to analyse to what extent the texts included in these descriptions could be matched to the right skills in ESCO. This process could be further explored. Currently there are issues and limitations³⁰ (see Chapter 1).

A free software AntConc toolkit developed by Dr Laurence Anthony³¹ – word list tool (frequency of words in the statements of LO). AntConc is a multiplatform tool for corpus linguistic research, for comparing and analysing texts. AntConc comprises in total seven tools of which two tools could be used for the comparison of qualifications – word list tool and concordance tool. The word list tool

29 Adopted from: Bonte, S., Dillen, V., Kinta, G., Lubică, G., Noesen, J., Pathóová, I., Ramina, B., Rutkovska, S., Trawińska-Konador, K., Wang, A. (2021). Report of the EQF Advisory Group project group on Horizontal comparison of qualifications. Brussels: Directorate-General for Employment, Social Affairs and Inclusion (unpublished).

30 Cedefop (2019). Comparing Vocational Education and Training Qualifications: towards a European Comparative Methodology. Draft Final Report. https://www.cedefop.europa.eu/files/exploring_gathering_and_analysing_national_qualifications_data_-_comparing_vet_qualifications_wa_2_draft_final_report_october_2019_v.03.pdf.

31 Anthony, L. (2019). Website. <https://www.laurenceanthony.net>.



counts all the words in the selected text and presents them in an ordered list. The concordance tool can be used for the qualitative analysis which shows search results in the context format displaying how the words and phrases are commonly used in the corpus of text. Using the AntConc toolkit allows to make conclusions about how concepts are commonly used in the learning outcomes, identifying the common expressions and frequency of the most used words and compare them with the keyword list.

Tools supporting qualitative analysis

Although qualitative analysis strongly relies on human skills, some tools were identified that may be used to support objective and consistent comparison of learning outcomes.

The software AntConc toolkit³² – concordance tool (displaying how the words and phrases are commonly used in the learning outcomes).

Online World Reference Level (WRL) tool³³ developed by UNESCO – allows users creating the profiles of the sets of learning outcomes. The tool since provides possibility to analyse the learning outcomes of qualifications according to 11 elements of capabilities. The WRL tool creates the profiles of the sets of learning outcomes using newly developed definitions of competences, capacities and levels.

Cedefop used HCEU/Vocational Qualification Transfer System (VQTS) Competence Matrix in order to compare qualifications. The VQTS model was developed and further applied in a series of EU funded projects. VQTS-based Competence Matrices are only available for selected occupational fields and they are usually not updated. However, the rationality for structuring the VQTS/HCEU Competence Matrix is generally logical and understandable, the descriptions are generally short and clear and are based on the holistic descriptors of competences related to work processes³⁴.

32 AntConc toolkit. Website: <https://www.laurenceanthony.net/software/antconc>.

33 The link to the online WRL tool not functional at the time of publication (September 2022). More information about the tool: UNESCO (2019). World Reference Levels. <https://unesdoc.unesco.org/ark:/48223/pf0000371395>.

34 Project “HealthCareEurope”. <https://www.project-hceu.eu/index.php?id=100>.



Good practice examples

According to the recommendations provided in the previous chapter a good practice examples were selected which includes most of the stated recommendations.

Good practice example from Armenia, Yerevan State University, Bachelor's Degree in Psychology

- A. Professional knowledge and understanding. Upon completion of the programme the student will be able to:
 - A1. Describe the main methodological principles, contemporary and fundamental theories in psychology; present their relevant concepts, approaches and notions; define their applied significance in various spheres of social life.
 - A2. Understand psychological issues, such as the regularities, mechanisms and peculiarities of an individual's mental development, normal and clinical manifestations of mental health.
 - A3. Define the main methods of carrying out psychological research, data collection, as well as analysis and interpretation of findings; distinguish the ways, possibilities and limitations of their application.
 - A4. Identify the psychological facts and regularities related to the fundamental and applied fields of psychology; understand their role and significance in individual and social life.
 - A5. Enumerate the main ethical principles of the psychologist's professional activity; highlight their significance and the importance to comply with them.
 - A6. Identify the symptoms of mental disorders and their classification systems.

- B. Practical professional skills. Upon completion of the programme the student will be able to:
 - B1. Apply the main methods of psychological research as required, analyse and interpret the obtained results to cope with professional (working or learning) issues.
 - B2. Put into practice the methods of psycho-recognition; draw well-grounded conclusions based on professional analysis.
 - B3. Distinguish and interpret psychological phenomena, psychological problems existing in various spheres of human life and activity; implement actions aimed at solving those problems.
 - B4. Combine various approaches of psychological work displaying creativity; find professional solutions providing socially useful activity.
 - B5. Organise his/her working and/or learning activities in accordance with the acquired theoretical knowledge and practical skills.

- C. General (transferable) skills: Upon completion of the programme the student will be able to:
 - C1. Cooperate with specialists of the given and other adjacent fields; work in a professional environment; maintain the standards of professional ethics.
 - C2. Implement ICT tools to facilitate and carry out efficiently the process of knowledge transfer and professional activities.
 - C3. Analyse critically and draw conclusions about theories, studies and applied issues.
 - C4. Prepare reports, present research findings, conduct scientific debates.
 - C5. Apply creatively the acquired knowledge; perceive and disseminate new information.



Good practice example from Latvia, Riga Stradiņš University, Bachelor of Social Sciences in Management and Administration

Knowledge

1. Able to demonstrate specialised knowledge in economics and management of international business and start-up entrepreneurship.
2. Able to demonstrate a critical and current understanding of concepts and regularities in the economics and management of international business and start-up entrepreneurship.
3. Able to demonstrate in-depth theoretical and practical knowledge of theory, analysis methods and tools in the economic analysis of international business and start-up entrepreneurship.
4. Is aware of the development of the necessary knowledge and skills, including social digital skills, and the need for self-growth in the global environment of international business and start-up entrepreneurship.

Skills

1. Able to identify trends and find creative solutions using a scientific approach to the changing problems of international business and start-up entrepreneurship.
2. Able to gather information from various sources analytically and independently, evaluate it critically and present it correctly.
3. Able to formulate information in a structured analytical and laconic concentrated manner in writing, to express oneself precisely and to discuss general and specialised aspects of international business and start-up entrepreneurship with arguments.
4. Able to use appropriate practical and theoretical knowledge and skills in professional business management and research (scientific) work, being aware of the impact of one's activities on the environment and society.

Competences

1. Able to plan business process and resources, including time, work, staff, talent, finance, infrastructure.
2. Able to participate in the development of international business and start-up entrepreneurship in a global environment, offering innovative solutions to industry problems.
3. Able to demonstrate an understanding of and application of professional ethics and culture, including intercultural ones, understanding thereof and respect thereto.

Good practice example from the United Kingdom, the University of Birmingham, Bachelor of Engineering in Aerospace Engineering

Core modules:

Aerospace Power Systems

By the end of the module students should be able to:

- Analyse the power requirements for an aerospace application (e.g. a large transonic airliner; a planetary explorer).
- Recommend a power system to meet these requirements and justify the choice.
- Make recommendations for Heating, Ventilation and Air Conditioning in aerospace applications.



Computational Fluid Dynamics and Finite Element Analysis for Aerospace A

By the end of the module students should be able to:

- Create an effective simulation of fluid flow in a given aerospace-related situation.
- Explain how to design a fluid flow simulation (including the choice of algorithm, element, mesh, parameters etc.).
- Explain the equations and phenomena underlying CFD simulation.

Computational Fluid Dynamics and Finite Element Analysis for Aerospace B

By the end of the module students should be able to:

- Create an effective simulation of a structure.
- Explain how to design a structural simulation (including the choice of element, mesh, parameters etc.).
- Explain the equations and phenomena underlying Finite Element Analysis.
- Create a simulation of a system involving aeroelasticity, i.e. fluid flow, inertia, and elastic deformation.

Flight dynamics and control A

By the end of the module students should be able to:

- Create a model/simulation of an aircraft in pitch using a computer language.
- Control the state of a representative aircraft model with control algorithms using a computer language.
- Analyse the effects of aircraft design on stability, control and performance.

Flight dynamics and control B

By the end of the module students should be able to:

- Demonstrate understanding of the concepts of aircraft static and dynamic stability in different flight regimes by using them to analyse and predict aircraft performance in those situations.
- Analyse flight test data to evaluate the stability and control characteristics of a given aircraft.
- Relate the flight test process and the stability, control and stall characteristics of aircraft to legislation and safety requirements.

Space Mission Analysis and Design

By the end of the module students should be able to:

- Apply a systems engineering approach to spacecraft design.
- Design mission-specific components; specifying their materials and construction.
- Explain how space missions are designed given a set of requirements.
- Describe the main elements of a spacecraft (payload and bus).



Annex 1. Country Chapter template

QUATREC 2 – Comparing qualifications for reliable recognition 2

Country chapter

The aim of the country chapters is to collect information about the use of learning outcomes in higher education. Information from country chapters will be used to develop methodology for writing and comparing learning outcomes in terms of recognition.

Please provide detailed information about each aspect regarding learning outcomes:

Country: _____

Chapter 1. General information about the use of learning outcomes

1.1 Legal framework for learning outcomes in higher education (if applicable)

Please provide links, if available.

1.2 Categories/ dimensions in which learning outcomes are expressed (e.g., knowledge, skills, competences) and how are they defined?

➤ At national level

➤ At higher education institution level

1.3 Are learning outcomes subject to Quality Assurance? Who assesses and how?

1.4 Are learning outcomes of the study programme indicated in Diploma Supplement (if there is one)?

Chapter 2. Good practice for writing learning outcomes in terms of recognition

2.1 Recommendations, guidelines, set procedures for writing learning outcomes (if applicable)

Please provide references and/or links, if possible.

➤ At national level

➤ At higher education institution level

2.2 Formulation of learning outcomes (who defines, what methodology is used, who approves, ownership)

➤ At national level

➤ At higher education institution level (including – number if learning outcomes used; use of NQF/EQF level descriptors)

2.3 Good practice example of formulating learning outcomes

2.4 Is the labour market involved in the development and use of the learning outcomes? If yes, then how?



Annex 2. Questionnaire of higher education institutions

The aim of the questionnaire is to find out how learning outcomes are formulated and assessed in higher education institutions, and to discover good practice examples for formulating learning outcomes.

1. Are there specific guidelines/recommendations used when formulating learning outcomes for study programmes? *If there are any specific guidelines, please provide a link.*
2. Are there set procedures for writing learning outcomes in your HEI? If yes, how often are these procedures updated and how often are they reviewed?
3. Categories/dimensions in which learning outcomes are expressed (e.g., knowledge, skills, competences) and how are they defined?
4. Is there a specific number of learning outcomes you use or does it differ for each study programme?
5. How the learning outcomes are assessed in your study programmes?
6. Are NQF/EQF level descriptors used when formulating learning outcomes? If they are, please describe how they are used.
7. How do you use the learning outcomes in the quality assurance process of a study programme and how can it be improved?
8. Is the labour market involved in the development and use of the learning outcomes? If yes, then how?
9. Does your HEI provide training for academic staff as regards to writing learning outcomes?
10. If there are no specific guidelines your HEI follow when formulating learning outcomes, then can you please briefly describe how you formulate learning outcomes for study programmes? What aspects do you pay most attention to when formulation learning outcomes?
11. Good practice example of formulating learning outcomes (EQF level 6 and/or 7)



Annex 3. QUATREC project fiche

Qualification:

Level of NQF/EQF:

Country	
Full title of qualification (EN)	
Full title of qualification (national lng)	
Access requirements	
Admission requirements	
Workload (amount of ECTS credits)	
Mode of study (if relevant)	
Profile (academic, professional)	
If relevant, add contextual information	
Access to further studies	
Professional rights (if exists)	
Awarding of qualification	
➤ Requirements for graduation	
➤ Awarding body: <ul style="list-style-type: none"> • Name of institution • Type of institution (for example, higher education institution) 	
➤ Procedure (if relevant)	
➤ Diploma Supplement (according to model developed by the European Commission, Council of Europe and UNESCO/CEPES) is awarded (Yes/No)	
➤ Other documents issued (Yes/No) <ul style="list-style-type: none"> • If yes what title and type 	
External quality assurance	
➤ Type of accreditation (e.g. programme, field, institution) <i>Please mention all types of accreditation necessary for this qualification to be state recognised in the country</i>	
➤ Title of quality assurance body (national, other)	
Learning outcomes	
➤ Visibility of learning outcomes (e.g. Diploma Supplement, website) <i>Please add links if available</i>	
➤ Formulation of learning outcomes (who defines, who approves, ownership)	
➤ Learning outcomes are subject to quality assurance (Yes/No)	
➤ Terminology of learning outcomes (e.g. knowledge, skills, competences, and definitions)	
➤ Generic learning outcomes (e.g. national, sectoral)	
➤ Learning outcomes (as defined by qualification provider or awarding body)	
Any other relevant information regarding the qualification	



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