



MICROGUIDE

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Abstract	The Analysis of the linking micro-credential to National Qualification Framework in Project Partner countries is necessary to identify the qualities and weaknesses in MCs practice in project partners countries, and in that sense to make a proposal for the best model of linking.
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1 Objectives

The impact of this activity is to identify the qualities and weaknesses in MCs practice regarding linking MCs to National Qualification Frameworks in Project partner countries HE, and in that sense to define a measure for their improvement.

Tasks are defining information sources, gathering information, analysing information, presenting the analysis results, and creating a proposal for the best model of linking.

Methodological steps in research activity are:

Step 1. To identify information sources regarding topic of the research;

Step 2. To collect relevant information;

Step 3. To analyse collected information;

Step 4. To discuss results obtained by analysis;

Step 5. To produce analysis report;

Step 6. To create a proposal for the best legislative model regarding the implementation of MCs in Project partner countries HE.

2 National Qualification Framework in Serbia

2.1 NQF snapshot

The Law on the National Qualifications Framework was adopted on 5 April 2018 and published in the Official Gazette of the Republic of Serbia on 6 April 2018. The National Qualifications Framework of Serbia (NQFS) has 8 levels and 4 sublevels.

The NQFS Law defines four qualification types:

- general - basic education and secondary education;
- vocational education and adult education;
- academic - higher education;
- vocational - higher education.

The NQFS Law specifies the institutional framework:

- an NQFS Council for strategic management of further NQF development and implementation. The Council is an advisory body that gives recommendations on planning and development of human capital in accordance with public policies in the field of lifelong learning, employment, career guidance and counselling.
- a Qualifications Agency that performs administrative and technical tasks for the Council.
- sector skills councils, whose main function is to define the needs for qualifications in the labour market in Serbia.

2.2 Policy context

Serbia is an EU candidate country. The Economic Reform Programme identifies significant challenges in the areas of labour market and employment, education and skills, social inclusion and social protection, such as:

- encouraging employment in less developed regions and development of regional and local employment policies;
- improving the quality of human capital (this includes development of career counselling, competence development of unemployed people by establishing a system of short training programmes, plus RPL);
- institutional capacity development and expansion of active employment policy programmes.

Important strategic documents in this context are Strategy for Education Development 2030¹ and the Digital Skills Development Strategy in the Republic of Serbia for the period from 2020 to 2024 ("Official Gazette of RS", No. 21 of March 6, 2020)².

¹ https://prosveta.gov.rs/wp-content/uploads/2021/11/1-SROVRS-2030_MASTER_0402_V1.pdf

² <http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/strategija/2020/21/2/reg/>

2.3 Aims of NQF

The aim of the NQFS is to structure and improve the qualification system in such a way that it is aligned with the requirements of socio-economic development, supports lifelong learning and facilitates workforce mobility⁸.

The goals of establishing the NQFS are:

- ensuring the readability and transparency of qualifications, as well as their interconnection;
- developing qualification standards based on the needs of the labour market and society as a whole;
- ensuring a learning outcomes-based education system;
- improving access and flexible learning paths in both formal and non-formal education;
- ensuring identification and recognition of non-formal education and informal learning;
- affirming the importance of key, general and cross-curricular competencies for lifelong learning;
- enhancing cooperation between relevant stakeholders and social partners;
- establishing a quality assurance system for the development and acquisition of qualifications;
- ensuring comparability and recognition of qualifications acquired in Serbia with those acquired in other countries.

2.4 NQF legal basis

The main NQFS legal act is the Law on the National Qualifications Framework of Serbia, adopted by parliament in April 2018³. Amendments to the Law on the NQFS were adopted in early 2020. The Law on Foundations of the Education System, the Law on Higher Education and the Law on Adult Education are consistent with the NQFS.

Based on the Law on the NQFS, the following bylaws have so far been adopted by Ministers⁴:

- Rulebook on the content and appearance of the initiative form for the development and adoption of qualification standards (Official Gazette of RS, No. 53 of April 9, 2020);
- Rulebook on standards of career guidance and counselling services (Official Gazette of RS, No. 43 of June 19, 2019);
- Rulebook on standards and manner of conducting the procedure of recognition of prior learning ("Official Gazette of RS", No. 148/2020);
- Rulebook on the methodology for the development of qualification standards ("Official Gazette of RS", No. 156/2020);
- Rulebook on the content and method of maintaining the Register of the National Qualifications Framework of the Republic of Serbia ("Official Gazette of RS", No. 159/2020);

³ <http://www.mpn.gov.rs/wp-content/uploads/2018/05/ZAKON-NOKS-18.pdf>

⁴ http://noks.mpn.gov.rs/sr_lat/zakoni-i-propisi/

- Rulebook on the system for classification and coding of qualifications in the National Qualifications Framework of the Republic of Serbia; ("Official Gazette of RS", No. 159/2020).

Several other bylaws are expected, including on additional quality assurance mechanisms and external evaluation of Publicly Recognised Organisers of Adult Education Activities (PROAEAs).

2.5 Levels, learning outcomes and qualifications

NQFS is an instrument to identify, create and classify qualifications in accordance with the demands of the labour market, lifelong learning, science and society.

NQFS defines processes and institutions (bodies, organisations) responsible for defining qualifications and qualification standards, methods and conditions for acquiring, comparing and recognition of qualifications, along with other mechanisms for quality assurance.

The NQFS consists of 8 levels and 4 sublevels. Levels 6 and 7 are each divided in two sublevels, reflecting qualifications of different volume at the same NQF level (e.g., level 6.1 180 ECTS, level 6.2 240 ECTS) (Table 1).

NQFS levels	Qualifications	EQF levels
1	primary education, primary adult education, primary music education, primary ballet education	1
2	vocational training lasting up to one year, education for work lasting up to two years, informal adult education with 120-360 hours of training	2
3	secondary vocational education lasting three years, non-formal adult education with training duration of minimum 960 hours	3
4	four-year secondary school education (vocational education, arts education, general education)	4
5	craftsman, i.e., specialist education lasting up to two or one-year non-formal adult education lasting minimum of six months	5
6	6.1 bachelor academic studies scope of at least 180 ECTS credits bachelor applied studies scope starting from 180 ECTS credits	6
	6.2 bachelor academic studies scope of at least 240 ECTS credits, specialised applied studies scope of at least 60 ECTS credits	
7	7.1 <ul style="list-style-type: none"> ▪ integrated academic studies scope of 300 to 360 ECTS credits ▪ master academic studies scope of at least 60 ECTS credits, with previously achieved bachelor academic studies scope of at least 240 ECTS credits, ▪ master academic studies scope of at least 120 ECTS credits (with previously achieved bachelor academic studies scope of 180 ECTS credits), ▪ master applied studies scope of at least 120 ECTS credits (with previously achieved bachelor applied studies scope of 180 ECTS credits) 	7
	7.2 specialised academic studies scope of at least 60 ECTS credits (with previously completed master academic studies)	
8	doctoral studies volume of 180 ECTS credits (with previously completed integrated academic, i.e., master academic studies)	8

Each level is defined in terms of competences acquired upon completion of a particular qualification. These competencies guide the allocation of qualifications obtained in higher education, general education, vocational education and training, and all the levels have a uniform structure. NQFS distinguishes three categories of competences: knowledge, skills, and abilities and attitudes (Figure 1).

NQFS LEVELS AND DESCRIPTORS

LEVEL	KNOWLEDGE	SKILLS	ABILITIES AND ATTITUDES
Person with acquired level of qualification:			
1.	Possesses basic general knowledge that allows further learning	Applies the skills needed to perform simple predictable tasks	Performs tasks or exams according to simple oral and written instructions, with direct supervision
2.	Possesses general and vocational knowledge of facts and basic principles required for work and/or learning	Applies the skills required to perform routine, pre-determined operational tasks; Handles tools and machines following detailed technical instructions using prescribed work materials	Performs tasks in accordance with established technical and technological procedures, with supervision; Is responsible for the implementation of established procedures, means and organisation of own work
3.	Possesses general and vocational knowledge of facts, basic principles and processes required for work and/or learning	Applies the skills required to perform less-complex, varied, occasionally non-standard operational tasks; Collects and selects relevant information; Operates special and equipment, machinery and plants using a variety of materials	Performs tasks independently in accordance with technical and technological procedures with periodic consultations; Organises own work; Is responsible for implementing procedures and means of his own work; Is enterprising in work
4.	Possesses systematic and theoretical knowledge required for work and/or learning	Applies the skills needed to perform complex, diverse, often non-standard tasks using different methods and techniques; Performs selection of relevant information gathered from various sources for use in work or learning; Handles various equipment, machinery and plants using different materials	Performs tasks independently in accordance with technical and technological procedures; Organises and controls own work and/or small group work; Identifies problems and participates in solving them; Is responsible for choosing procedures and method of his own work, and for operative work of others
5.	Possesses the specialised professional knowledge required to work and/or learning	Applies the skills needed to perform complex, specific and mostly non-standard tasks that require participation in the creation of new solutions; Operates special and equipment, machinery and plants using a variety of materials	Performs jobs with great autonomy in decision making; Organises, controls and evaluates the personal and/or the work of others, and trains others for work; Takes responsibility for determining own methods of work, as well as for the operational work of others; Shows entrepreneurialism to improve workflows and solve the problems in unpredictable situations
6.1	Possesses advanced academic and/or professional knowledge related to theories, principles and processes including evaluation, critical understanding and application in the field of learning and/or work	Solves complex problems in the field of learning and/or working in non-standard conditions; Applies skills of successful communication in interaction and collaboration with others from different social groups; Uses equipment, instruments and devices relevant to the field of learning and/or work	Is enterprising in solving problems under non-standard conditions; Manages complex projects independently and with full responsibility; Applies the ethical standards of his profession; Organises, controls, and trains others to work; Analyses and evaluates different concepts, models and principles of theory and practise; Expresses a positive attitude towards the importance of lifelong learning in personal and professional development
6.2	Possesses advanced academic and/or professional knowledge related to theories, principles and processes including evaluation, critical understanding and application in the narrow special field of learning and/or work	Solves complex problems in the narrow field of learning and/or working in nonstandard conditions; Applies skills of successful communication in interaction and collaboration with others from different social groups; Uses specialised equipment, instruments and devices relevant to the field of learning and/or work	Is enterprising in solving problems under non-standard conditions; Manages complex projects independently and with full responsibility; Applies the ethical standards of his profession; Organises, controls, and trains others to work; Analyses and evaluates different concepts, models and principles of theory and practise by advancing existing practise; Expresses a positive attitude towards the importance of lifelong learning in personal and professional development
7.1	Possesses highly specialised academic and/or professional knowledge related to theories, principles and processes including evaluation, critical understanding and application in the field of study and/or work as a basis for scientific and applied research	Solves complex problems in an innovative way that contributes to the development in the field of learning and/or work; Manages and runs complex communication, interaction and collaboration with others from different social groups; Applies complex methods, instruments and devices relevant to the field of learning and/or work as a basis for scientific and applied research	Acts entrepreneurial and undertakes managerial tasks; Runs the most complex projects on his own and with full responsibility; Controls work and evaluates the results of others to advance existing practices
7.2	Possesses narrowly specialised academic or professional knowledge related to theories, principles and processes including evaluation, critical understanding and application in the field of study and/or work as a basis for scientific and applied research	Solves complex problems in an innovative way that contributes to the development in the field of learning and/or work; Manages and runs complex communication, interaction and collaboration with others from different social groups; Applies complex methods, instruments and devices relevant to the field of learning and/or work as a basis for scientific and applied research	Acts entrepreneurial and undertakes managerial tasks; Runs the most complex projects on his own and with full responsibility; Controls work and evaluates the results of others to advance existing practices
8.	Possesses superior theoretical and practical knowledge needed for critical analysis and original research in fundamental and applied fields of science with the purpose of expanding and redefining existing knowledge, science or field of work	Applies advanced and specialised skills and techniques needed to solve key research problems and to expand and redefine existing knowledge or field of work; Applies communication skills to explain and critique theories, methodologies and conclusions, as well as to present research findings in relation to international standards and the scientific community; Develops new tools, instruments and devices relevant to science and work	Independently evaluates contemporary results and achievements in order to advance existing ones, and to create new models, concepts, ideas and theories; Demonstrates innovation, scientific and professional integrity and commitment to developing new ideas and/or processes that are at the centre of the work or science context, through the principle of self-evaluation of own work and achievements; Designs, analyses and implements researches that make a significant and original contribution to general knowledge and/or professional practice; Manages interdisciplinary and multidisciplinary projects; Is able to initiate national and international science and development cooperation on his own

2.6 Institutional arrangements and stakeholder involvement

2.6.1 Governance and institutional arrangements for the NQF

Based on the NQFS Law, an NQFS council, a dedicated qualifications agency, and 12 sector skills councils have been established.

The NQFS Council, exercises strategic management of the NQFS' development and implementation.

The Council is an advisory body appointed by the Government of the Republic of Serbia.

The Qualifications Agency is a specialised, technical body which performs administrative and technical tasks and expert support for the Council and proposes quality assurance measures throughout the entire education system.

The Sector Skills Councils' main task is to define the need for qualifications in the labour market in Serbia.

2.6.2 Roles and functions of actors and stakeholders

The NQFS Council is an advisory body that gives recommendations on the process of planning and development of human resources in accordance with public policies in the field of lifelong learning, employment, career guidance and counselling. The NQFS Law describes the main competences of the Council as follows:

The Council:

- proposes qualification standards for all levels of the NQFS;

- proposes to the Government the establishment of sector skills councils for specific sectors of work or activities;
- monitors the work of the Sector Skills Councils and makes recommendations for the improvement of their work, based on regular progress reports;
- gives opinions to the minister responsible for education on the recommendations of the Councils regarding the enrolment policy in secondary schools and higher education institutions;
- makes recommendations on the process of planning and development of human resources in accordance with the strategic documents of the Republic of Serbia;
- makes recommendations on improving links between education and labour market needs;
- gives opinions on standards for self-evaluation and external quality assurance of PROAEAs;
- performs other duties in accordance with this Law.

The Qualifications Agency has been established to perform quality assurance and professional support to the NQFS Council and other competent organizations in all aspects of the development and implementation of the NQF. The Agency has the status of a legal entity. The NQFS Law describes the main competences of the Agency as follows:

- considers initiatives for the introduction of new qualifications;
- provides expert support to the Sector Skills Councils and prepares proposals for qualification standards;
- provides administrative and technical support to the work of the Councils;
- maintains the Registry and takes care of the entry of data into the appropriate sub-registries;
- classifies and encrypts qualifications according to the National Qualifications Classification System (CLASSNQFS);
- performs procedures for recognition of foreign school documents;
- carries out the procedure for recognition of a foreign higher education document for the purpose of employment (professional recognition), in accordance with this law and the law regulating higher education;
- performs the first validation of a foreign study programme, in accordance with the NQFS law and the law regulating higher education;
- grants approval to organizations requesting PROAEA status;
- decides fee levels for the recognition procedures of foreign school documents and higher education documents;
- keeps records of professional recognition in accordance with the NQFS law and the law regulating higher education;
- conducts an external quality control of the PROAEAs, once every five years;

- at the request of the ministry responsible for education, issues a report on the fulfilment of requirements regarding the plan and programme of adult education activities, programme implementation and staffing;
- prepares development projects, and carries out analysis and research relevant to the development of qualifications;
- monitors and measures the effects of the implementation of (new) qualifications on employment and lifelong learning;
- proposes measures for the improvement of quality assurance in the entire system;
- performs other duties in accordance with this Law.

Sector Skills Councils are advisory bodies established on the principle of social partnership. Their main task is to define the need for qualifications within a certain sector in secondary, vocational, higher and adult education. The NQFS Law describes the competences of the sector skills councils as follows:

- analyse the existing qualifications and determine the necessary qualifications in a specific sector;
- identify the qualifications to be modernised;
- identify those qualifications that no longer meet the needs of the sector;
- recommend development of new qualifications standards within its sector; (the Qualifications Agency drafts the standard, or arranges its drafting);
- give an opinion on the expected outcomes of knowledge and skills within the sector;
- promote dialogue and direct cooperation between the world of work and education;
- promote opportunities for education, training and employment within the sector;
- identify opportunities for training adults within the sector;
- consider the implications of the national qualifications framework on qualifications within the sector;
- propose lists of qualifications by levels and types that can be acquired by recognizing prior learning;
- perform other duties in accordance with the NQFS Law.

2.7 Qualifications registers and databases

The current Register consists of several sub-registers, including a National Qualifications sub-register (records data on qualifications, classified by level and type, in accordance with CLASSNQFS) a Qualification Standard sub-register and a sub-register of Publicly Recognized Organisers of Adult Education Activities⁵.

⁵ <https://noks.azk.gov.rs/pretraga-registara/pretraga-nacionalnih-kvalifikacija.html>

2.8 Accreditation of micro-credentials in higher education in Serbia

Micro-credentials currently do not exist in higher education in Serbia, so one of the advantages of their implementation is their link to the NQFS.

A possible solution is the similar approach as in the case of MCs accreditation – defining micro-credentials as the special case of lifelong learning programs will allow their link to the NQFS. However, since qualifications belonging to NQFS levels 6-8 are full qualifications, the competences achieved through MCs will not respond fully to the descriptors. Hence, one pragmatic approach could be to link MCs content to the content of HE courses: if majority of some MCs content belongs to the content held at the HEI at the study cycle of level 6.2, then also that MCs could be link **by content, and not by descriptors**, to the level 6.2.

3 National Qualification Framework in Austria

According to the OeAD ⁶the aim of the National Qualifications Framework (NQF) is “to create a translation tool between the different qualifications systems and their levels for all areas of education in Austria.” The recording and classification of the qualifications into eight levels is oriented upon learning results and is based on the European Qualifications Framework for Lifelong Learning (EQF). This number of levels has been considered appropriate by various studies on the implicit levels of the Austrian education system and NQF pilot projects and has received clear support from stakeholders’ responses to the national consultation on the EQF.

The coordination point for the NQF, which has been established at the OeAD-GmbH, offers information about NQR / EQF on its website www.qualifikationsregister.at/en/. The NQF descriptors are based on the EQF descriptors and describe learning outcomes in three dimensions (knowledge, skills, competence). To support qualification providers in the process of referencing their qualifications to an NQF level, the NQF manual provides more detailed specifications that put the EQF descriptors into a more practical and national context.

At levels one to five, qualifications of all education sectors are referenced on the basis of the NQF descriptors. At levels six to eight, two sets of descriptors apply – the NQF descriptors and the Dublin descriptors. Whereas qualifications of the Bologna architecture acquired at HE institutions (bachelor, master, PhD, diploma studies) are referenced according to the Dublin descriptors, referencing of all other qualifications is carried out on the basis of the NQF descriptors.

3.1 Micro-credentials within the NQF or EQF

According to the Council recommendation on Micro-credentials 2022, micro-credentials should “be included in national qualifications frameworks/systems, where relevant, and in line with national priorities and decisions. National qualifications frameworks/systems are referenced to the European qualifications framework and, for higher education qualifications, self-certified to the qualifications framework of the European Higher Education Area, which can further support the transparency of, and trust in, micro-credentials”.

According to the ETF⁷ there are two possible ways how to link micro-credentials to existing NQF, a process that involves several steps should be followed, which include also:

1. Understand the National Qualification Framework: The NQF provides a framework for classifying qualifications based on learning outcomes and competencies, which is also of significant importance in developing micro-credentials.
2. micro-credentials should be linked to the NQF within the development phase. Micro-credentials should be well-defined, specific, and aligned with targeted learning outcomes or

⁶ OeAD, Austria’s Agency for Education and Internationalisation

⁷ European Training Foundation

competencies with the reference to the “level descriptors of respective national or regional qualifications frameworks” (ETF, 2022). The similarities and alignment between the requirements of the micro-credentials and the NQF descriptors should be recognised and mapped. It has to be visible how micro-credentials contribute to the overall qualification framework.

3.2 Position of Austria

At the moment, the Austrian Ministry of Education, Science and Research is preparing a recommendation on definition, position and handling of micro-credentials in Austria, which should be published in autumn 2023. Based on the ministry position paper from 2022, the status of micro-credentials in regard to the national qualification framework, is that *“Micro-credentials should not be assigned to the NQF due to the low workload. In the context of the national NQF, we speak of longer periods of learning, training and further education (“meaningful units”). Allocation of such short qualifications would lead to confusion in the public image of the NQF.”*

3.3 References and links to important regulations, laws, and agreements

1. [Ministry of Education, Science and Research in Austria: Micro-credentials \(bmbwf.gv.at\)](https://www.bmbwf.gv.at)
2. [“Council recommendation of 16th June 2022 on a European approach to Micro-Credentials for Lifelong Learning and Employability.” \(Official Journal of the European Union, vol. 2022/C 16 June 2022\).](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627(02)) [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627\(02\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627(02)). Accessed: March 2023
3. [“Council recommendation of 22 May 2017 on the European Qualifications Framework for Lifelong learning and Repealing the Recommendation of the European Parliament and of the Council of 23 April 2008 on the Establishment of the European Qualifications Framework for Lifelong Learning.” Official Journal of the European Union, vol. 2017/C 22 May 2017\).](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017H0615(01)) [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017H0615\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017H0615(01)). Accessed: March 2023
4. [ETF. Guide to Design, issue and recognise Micro-credentials 2022.](https://www.etf.europa.eu/sites/default/files/2023-06/Micro-Credential%20Guidelines%20Final%20Delivery.pdf) <https://www.etf.europa.eu/sites/default/files/2023-06/Micro-Credential%20Guidelines%20Final%20Delivery.pdf>. Accessed: June 2023
5. [“The NQF Act \(2016\)” Federal Law Gazette.](https://www.ris.bka.gv.at/Dokumente/BgblAuth/BGBLA_2016_I_14/BGBLA_2016_I_14.pdf) https://www.ris.bka.gv.at/Dokumente/BgblAuth/BGBLA_2016_I_14/BGBLA_2016_I_14.pdf
6. [BgbAuth/BGBLA_2016_I_14/BGBLA_2016_I_14.pdf](https://www.ris.bka.gv.at/Dokumente/BgblAuth/BGBLA_2016_I_14/BGBLA_2016_I_14.pdf)sig. Accessed: June 2023

4 National Qualification Framework in Germany

This report analyses the linking of micro-credentials to the German National Qualification Framework otherwise known as Deutscher Qualifikationsrahmen generally abbreviated as DQR. The main objective of the report is to propose a method for linking micro-credentials to DQR. To achieve this objective, the following tasks were carried out.

- Gathering and synthesizing information about DQR and the European Qualification Framework (EQF);
- Collecting existing evidence on the linkages between DQR and EQF;
- Proposing a model for linking micro-credentials with the DQR in the form of conditional recommendations, which would be explained later in the proposal section.

The target group of this analysis report includes higher education institutions in Germany. The outcomes of this report include a best practice proposal for linking micro-credentials with DQR and the rationale behind the proposed linkage to DQR. In order to establish a practical research framework for this study, it was necessary to define the analysis scope. Since this report employs a desk research and literature review approach, the proposals contained in this report are entirely informed by evidence from secondary data. It is important to re-emphasize that the purpose of this report was not to analyse existing micro-credentials, as this would be unfeasible given the time limitation and huge variety of micro-credentials. In essence, this study focuses on only analysing all relevant secondary data providing information about the linking of micro-credentials to qualification frameworks, particularly, the DQR. Answers to the research questions are systematically gathered from the micro-credential and analysed to formulate the current proposal.

4.1 Overview of Germany's National Qualification Framework

DQR is a comprehensive system that provides a structured framework for the recognition, assessment, and certification of qualifications across various education and training sectors. It was officially launched in May 2013 by the joint resolution of the Standing Conference of the Ministers for Education and Cultural Affairs of the Länder, the Federal Ministry of Education and Research (BMBF), the Conference of Ministers for Economics of the Länder, and the Federal Ministry of Economics and Technology.

The DQR was the first framework to consider all qualifications of the German education system across all educational sectors (Eurydice, 2023). The framework is an alignment instrument for facilitating orientation of qualifications in the German educational system and the comparability of German qualifications in Europe (BIBB, 2015). It seeks to aid lifelong learning and the development of a skilled workforce, as well as the validation of non-formal and informal learning, by serving as a guiding tool in the identification and evaluation of skills during the validation process (UNESCO-UNEVOC, 2022).

More specifically, the DQR aims to:

- enhance transparency in German qualifications and aid their recognition all over Europe;
- facilitate the mobility of learners and workers between Germany and other European countries, as well as within Germany;
- promote the clarity and comparability of qualifications to facilitate their recognition and mobility;
- foster trustworthiness, facilitate transferability, and ensure quality assurance;
- increase the focus on skill development in qualifications;
- strengthen the focus on learning outcomes in the qualification process;
- enhance validation and recognition opportunities for non-formal and informal learning pathways;
- improve lifelong learning by facilitating access and increasing participation (Cedefop, 2021).

DQR provides a framework for describing professional and personal competencies on eight levels. Each level is defined in terms of competences that a learner should have acquired upon completion of a particular qualification. These competencies guide the allocation of qualifications obtained in higher education, general education, vocational education and training, and all the levels have a uniform structure. DQR distinguishes between two categories of competence: professional competence, which is subdivided into knowledge and skills, and personal competence, which is divided into social competence and autonomy. The concept of competence expresses the core aim of all areas of the German education system, which is to enable learners to develop a comprehensive ability to act (“Umfassende Handlungskompetenz”) within an academic field or job-related activity. The emphasis is not solely on possessing knowledge and skills in isolation, but rather on the capacity and preparedness to apply that knowledge and act responsibly within a particular field of expertise (BMBF, 2019).

DQR has been developed and implemented through a gradual, bottom-up process among stakeholders in the DQR working group (Arbeitskreis DQR) comprising education providers from higher education, vocational education and training (VET), general education, ministries, social partners, public institutions, and the labour market, as well as researchers and practitioners. The agency responsible for the implementation of the DQR is the coordination point for the DQR (Bund-Länder-Koordinierungsstelle DQR), which was formed in a joint initiative of the federal government and the Länder.

DQR aims to make the German educational system transparent by assigning qualifications from general education, higher education, and VET to eight competence levels based on learning outcomes. VET qualifications, including preparatory programs, are allocated levels 1 to 7, while higher DQR levels are open to qualifications from different sectors. For example, the master craftsman qualification is placed at DQR level 6, which is comparable to a bachelor’s degree. Similarly, the upper secondary general

education school leaving certificate (Allgemeine Hochschulreife) and dual VET courses (3 years and 3,5 years) are allocated to DQR level 4.

It is worthy to mention that the DQR levels have been linked to specific types of qualifications in formal education. However, qualifications from informal and non-formal/non-regulated education have not yet been included in the framework (UNESCO-UNEVOC, 2022). The DQR is regarded as Germany's response to the European education policy agenda, and it is based on the European Qualifications Framework (EQF), which provides a common reference framework for the recognition of qualifications across Europe.

4.2 Linking micro-credentials to DQR

Currently, micro-credentials have not been linked to the DQR. Nevertheless, there is growing evidence that the alignment of micro-credentials to the DQR will ensure that they are understood and recognised by employers, educational establishments across sectors, geographic areas and the wider society.

4.2.1 Landscape of micro-credentials in Germany

Micro-credentials in Germany are offered by both formal and non-formal educational institutions, including schools, colleges, universities, and professional organizations. Despite their prevalent utilization within formal education, specifically higher education institutions, not much is known about the alignment of micro-credentials to the German national qualification framework within the context of vocational education and training (Hippach-Schneider & Mouillour 2022) and non-formal education. Micro-credentials have potentials for higher education as evidenced by the German Science and Humanities Council's recommendation: micro-credentials 'complement a comprehensive study programme as well as certificate studies and modularised programmes within the framework of further academic education.' Nevertheless, the supply of academic micro-certificates offered by German universities is still quite small, with only about one in five universities currently offering them for the year 2022. Two surveys conducted by the German Academic Exchange Service (DAAD), though non-representative, provide insights into developments on micro-credentials in HEIs. According to the first survey, among the 160 German higher education institutions that took part, 20% of them are currently using micro-credentials. Additionally, 23% of the institutions are engaged in discussions regarding the potential implementation of micro-credentials, whereas 37% have not yet addressed the matter. The second survey involved German higher education institutions that are part of the EU initiative "European University Networks," with 34 HEIs participating. Among these, approximately 25 percent are currently implementing micro-credentials, while an additional 65 percent of the surveyed HEIs have intentions to incorporate them within the framework of the European alliances. In both surveys, HEIs identify continuing academic education and lifelong learning as the primary and significant domains for the micro-credentials, many of which are subject to a fee (DAAD, 2022). From

the perspective of learners, unlike macro-credentials, micro-credentials offer flexible and relatively inexpensive courses which closely align with learners' needs, particularly in subject areas where employees or learners need to upskill or re-skill quickly (OECD, 2021; Cowie & Sakui, 2022). Employers perceive that the inclusion of micro-credentials in the recruitment process plays a significant role in hiring decisions. On one hand, employers perceive micro-credentials as a valuable avenue for acquiring specialized training and fostering expertise through various courses. However, it is worth noting that in certain instances, employers may not view technical certifications like micro-credentials as reliable indicators of genuine competence and knowledge (Uggeri & Barlassina, 2019). Regarding the potential linking of micro-credentials to the national qualification frameworks, two key challenges are particularly noteworthy: firstly, recognition and crediting, and secondly, the debate on a common understanding of quality.

4.2.2 Recognition and crediting

With the wide range of micro-credentials available, the importance of recognition and crediting is increasingly important. Currently, recognition regulations primarily rely on formal educational qualifications and documented achievements within their established systems. While the rise of MOOCs, even in Europe, has opened up the opportunity to incorporate micro-credentials into accredited study programs and address recognition concerns, there is still a lack of consistent guidelines for evaluating competencies gained in digital educational settings. This presents a challenge when it comes to recognizing micro-learning programs, which are generally considered as non-formal education programs.

4.2.3 Uniform understanding of quality

There has been a lack of a common understanding of quality, reinforcing the possible lack of transparency within the education market and making it difficult to evaluate respective programmes – both for the course offerings and learners. This issue is particularly evident in cooperation and franchised programs, where it is often unclear who is responsible for administering the micro-credential, evaluating students, and issuing certificates. There is a general consensus among national and international education initiatives and policymakers that existing standards and key elements of higher education should serve as a base for designing and ensuring quality in micro-learning formats. In 2019, the European MOOC Consortium (EMC) introduced the Common Micro-credential Framework (section 2.8), which outlines specific characteristics for micro-credentials and encourages voluntary adoption. However, there is no consensus on the level of detail needed for defining and specifying these characteristics. Critics also caution against overly restrictive frameworks, as they may hinder innovation in the education market and unnecessarily limit the potential of micro-credentials. (Flasdick et al., 2023)

4.2.4 Micro-credentials: independent vs integrated models

Micro-credentials may be offered entirely independently (stand-alone) or incorporated into another qualification (stackability), including formal higher education qualifications. The three models of integration are discussed below.

- Embedded model: in this model, the integration of micro-credentials into another qualification program is intentionally designed, wherein the course content and assessments of the micro-credential replace locally created content and assessments.
- Recognition of prior learning model: in the recognition of prior learning and academic credits for qualification programs, qualification awarding bodies have the option to consider micro-credentials retrospectively. For instance, Kiron, a German NGO, provides a study program for refugees that utilizes MOOCs. If students enrol in Kiron's partner universities, they can be awarded a maximum of 60 ECTS credits, equivalent to a full-time study year's workload.
- Modular model: learners have the option to pursue micro-credentials in the form of modules, which can function as stand-alone qualifications. Upon successful completion of the multiple micro-credentials, learners receive another qualification. For instance, some HEIs divide specific sections of a master's degree program into modules, making them available through online learning platforms such as MicroMasters from edX and MasterTrack Certificates from Coursera (Kato et al., 2020).

4.2.5 Guiding standards and qualities of micro-credentials

The EU MOOC Consortium (EMC) has suggested the EU standards for fundamental components of micro-credentials in order to promote trust and uniformity among micro-credentials, considering their wide range of diversity. While a diploma supplement offers essential details for international recognition of higher education degrees, there is presently no uniform method for explaining micro-credentials. The inconsistency in information creates challenges for learners, employers, higher education institutions, and quality assurance agencies in comprehending the worth and substance of micro-credentials and in making comparisons among them. According to the EMC, a micro-credential should provide the following critical information as seen in the EU standards for constitutive elements of micro-credentials.

- Identification of the learner
- Title of the micro-credential
- Country/region of the issuer
- Awarding body
- Date of issuing
- Notional workload needed to achieve the learning outcomes (in ECTS, wherever possible)

- Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF and/or national qualifications framework; Overarching Framework of Qualifications of the European Education Area)
- Learning outcomes
- Form of participation in the learning activity (online, onsite or blended, volunteering, work experience)
- Prerequisites needed to enrol in the learning activity*
- Type of assessment (testing, application of a skill, portfolio, recognition of prior learning, etc.)
- Supervision and identity verification during assessment (unsupervised with no identity verification, supervised with no identity verification, supervised online or onsite with identity verification)*
- Quality assurance of the credential and, where relevant, of the learning content
- Grade achieved*
- Integration/stackability options* (standalone, independent micro-credential / integrated, stackable towards another credential)
- Further information*: Given that micro-credentials may be interdisciplinary, it was suggested that micro-credentials highlight relevant thematic areas using International Standard Classification of Education level F (ISCED-F) or similar (European Commission, 2020).

4.3 Weaknesses or challenges of linking micro-credentials with DQR

1. Perhaps the most critical issue for micro-credential is that there are few existing national
2. frameworks that they already fit into (OECD, 2021), DQR inclusive. If a learner undertakes a university degree course, that will clearly fit into the German national qualification framework, but this is not the case with micro-credentials (Cowie & Sakui, 2022).
3. Ensuring the validity of micro-credentials and fostering its linkage to DQR is complicated as they vary in terms of course providers. Take for example, micro-credentials could be issued by formal education institutions and non-formal education providers (private providers of labour market-relevant training).
4. Micro-credentials vary in terms of learning outcomes, duration, costs, modes of assessment, whether they can lead to further qualifications or not, and whether they are credit-bearing or not. Therefore, linking micro-credentials to DQR may require an individual basis approach, rather than a uniform standardized method.
5. There are concerns from the German government that the potential alignment of
6. micro-credentials to the DQR (and hence also the EQF) might undermine the credibility of and trust in the respective qualification frameworks (Hippach-Schneider & Mouillour 2022).

4.4 Current research on linking micro-credentials to qualification frameworks

In Autumn 2020, MICROBOL, a project funded by the Erasmus+ programme, disseminated a survey among the Bologna Follow-up Group as well as nominated representatives of the MICROBOL working group, to examine the possibility of integrating micro-credentials into existing national qualification frameworks. The results reveal that micro-credentials have not been referenced to NQFs in the majority of countries. However, it was widely agreed that any reference to micro-credentials in the NQF would support the transparency and recognition of micro-credentials internationally (Lantero, 2021). The survey provides insights into how various countries have integrated micro-credentials into their national qualification frameworks. The findings survey, which comprised 35 countries, reveal that:

- two countries have micro-credentials referenced from level 1 to 7 of the EQF
- one country from level 2 to 8
- one country from level 2 to 7
- one country from level 5 to 8
- one country at higher education level (Finocchietti, 2021)

Following the recommendation of the European Approach to Micro-credentials (European Union, 2020), micro-credentials that are issued by formal education institutions could be aligned with the EQF (through NQFs) and ECTS. Therefore, the proposed alignment of micro-credentials to the DQR builds upon the Common Micro-credential Framework (CMF), which applies to professional training, MOOCs, short learning programs as well as short higher education programs for continuous education/professional development. The CMF was developed by the European MOOC consortium which consists of the main European MOOCs platforms: FutureLearn, OpenupEd. FUN, MiriadaX and EduOpen. These partners represent most of the MOOC development work in Europe in terms of learners and number of MOOCs, offering in total over 2000 MOOCs and representing a large network of 250 universities, colleges, and companies. The CMF is based on a similar set of criteria used in the Bologna Process and the European Higher Education Area (EHEA). According to the CMF, micro-credential design should:

- have 4-6 ECTS/100 to 150 hours of study time.
- be placed in level 6-8 in the EQF (bachelor, master, and third cycle level), with options for level 6 (in combination with ECTS).
- provide summative assessment that awards academic credit, upon successful completion of the micro-credential or through recognition of prior learning upon enrolment on a university's course of study.
- provide a micro-credential supplement that highlights the learning outcomes, total study hours needed, EQF level, and number of credit points gained (Antonaci, 2021) .
- In Australia, an Expert Panel suggested that the country's formal qualifications framework

(NQF) should include micro-credentials and shorter qualifications, in 2019. This recommendation aligns with approaches taken in New Zealand and Europe, where micro-credentials are integrated (stacked) into formal qualifications. However, "stacking" micro-credentials does not imply non-credit or non-formal training and competency validation would be pursued by the provider; instead, it means combining them with formal credentials based on consistent credit qualifications criteria. Micro-credentials are seen as building on existing qualifications frameworks and systems for training and competency-based learning. While not all micro-credentials will have the same criteria, aligning and stacking them with formal credit-bearing qualifications will be easier to realize in some HEIs in Europe, New Zealand, Australia and South Africa (McGreal & Olcott, 2022)

4.5 Prerequisites for linking micro-credentials to DQR

The following conditions need to be met for a potential linking of micro-credentials to the DQR.

- ECTS should be used for micro-credentials provided by HEIs to support compatibility with other institutional academic entry requirements and possibility of integrating micro-credentials into existing qualification programs.
- Micro-credentials are increasingly provided by a broad range of non-university institutions including commercial firms and NGOs 'who are not necessarily trusted yet,' posing threats to credibility of such micro-credentials (UNESCO, 2022). Besides, non-university micro-credential providers might face issues in ensuring correct allocation of ECTS, therefore, it is recommended the providers have some kind of collaboration or agreement with HEIs who are more experienced with verifying learning outcomes, and micro-credential workload. For example, Northeastern University and IBM have a partnership that allows IBM-micro-credential holders to receive graduate credit from the university (Leaser et al., 2020).
- Higher education institutions are autonomous, each with its own policy regarding the crediting, recognition and stackability of micro-credentials. Against this backdrop, it is believed that a coalition of all HEIs in Germany is designing a repository of partnership expectations which could potentially provide necessary guidelines to other formal educational institutions or non-formal and informal education systems who might be interested in collaborating with a HEI, could be beneficial.
- The design of micro-credentials follows agreed standards, for instance the European Common Micro-Credential Framework.
- HEIs need to have discussion about the recognition of competencies developed through university-provided micro-credentials and crediting of competencies via non-university organisations since HEIs may have different legal frameworks and examination criteria (HRK, 2020).

- Micro-credentials would be subject to regular quality assurance reviews by appropriate regulatory bodies to ensure they continue to meet intended needs.
- Stacking micro-credentials into existing formal qualifications appears to be the most viable way of linking micro-credentials to DQR. Therefore, the design of micro-credentials needs to align with formal qualification outcomes and strategic purpose.

4.6 References and links to important regulations, laws, and agreements

1. [Antonaci, A., Henderikx, P., & Ubachs, G. \(2021\). The common micro-credentials framework for MOOCs and short learning programmes. Journal of Innovation in Polytechnic Education, 3\(1\), 5-9.](#)
2. <https://jipe.ca/index.php/jipe/article/view/89>
3. [BIBB. \(2015\). DQR - German qualifications framework. BIBB. Retrieved May 4, 2023, from](#)
4. <https://www.bibb.de/en/596.php>
5. [Bideau, Y., & Kearns, T. \(2022\). A European approach to micro-credentials for lifelong learning and employability, Journal of European CME, 11:1, DOI: 10.1080/21614083.2022.2147288](#)
6. [BMBF. \(2019\). How is the DQR structured? - Deutscher Qualifikationsrahmen. German Qualifications Framework.](#)
7. https://www.dqr.de/dqr/en/the-dqr/how-is-the-dqr-structured/how-is-the-dqr-structured_node.html
8. [Cedefop \(2020\). National qualifications frameworks developments in Europe 2019. Qualifications frameworks: transparency and added value for end users. Retrieved from](#)
9. <https://data.europa.eu/doi/10.2801/105773>
10. [Cedefop \(2021\). European inventory of NQFs 2020 – Germany.](#)
11. <https://www.cedefop.europa.eu/en/country-reports/germany-european-inventory-nqfs-2020>
12. [Cowie, N., & Sakui, K. \(2022\). Micro-credentials: surveying the landscape. JALTCALL Publications, PCP2021\(1\).](#)
13. <https://doi.org/10.37546/JALTSIG.CALL.PCP2021-02>
14. [DAAD. \(2022\). Micro-credentials as part of internationalisation. https://www.daad.de/en/the-daad/communication-publications/press/press_releases/umfragen-microcredentials-als-teil-der-internationalisierung/](#)
15. [European Commission. Directorate General for Education, Youth, Sport and Culture. \(2020\). A European approach to micro-credentials: Output of the micro credentials higher education consultation group : final report. Publications Office.](#)

16. <https://data.europa.eu/doi/10.2766/30863>
17. [European Union \(2018\). The European Qualifications Framework: Supporting Learning, Work and Cross-Border Mobility. Retrieved May 5, 2023.](#)
18. <https://ec.europa.eu/social/BlobServlet?docId=19190&langId=en>
19. [Eurydice \(2023\). National qualifications framework. European Commission. Retrieved May 4, 2023 https://eurydice.eacea.ec.europa.eu/national-education-systems/germany/national-qualifications-framework](#)
20. [Finocchietti, C. \(2021\). Micro-credentials and Bologna key commitments: State of play in the European higher education area \(survey results\). https://microcredentials.eu/wp-content/uploads/sites/20/2021/01/Results_microbol_survey_27.01.pdf](#)
21. [Flasdick, J., Mah, D.-K., Bernd, M., & Rampelt, F. \(2023\). Micro-credentials and micro-degrees. Current developments and potentials for educational practice based on the example of AI Campus. Berlin:AI Campus.](#)
22. <https://doi.org/10.5281/zenodo.7327638>
23. [Hippach-Schneider, U., & Mouillour, I. L. \(2022\). Micro-credentials: A European initiative for lifelong learning – new and yet familiar. Micro-credentials: a European initiative for lifelong learning – new and yet familiar.](#)
24. https://www.bwp-zeitschrift.de/en/bwp_161471.php
25. [HRK German Rectors' Conference \(2020\). Micro-degrees and badges as formats of supplementary digital credentials.](#)
26. <https://www.hrk.de/resolutions-publications/resolutions/beschluss/detail/micro-degrees-and-badges-as-formats-of-supplementary-digital-credentials/>
27. [Karpíšek, M., & Brink, T. \(2021\). Micro-credentials within the EHEA: Background study.](#)
28. <https://www.ehea.info/Upload/Report%20Mihal%20Karpisek%202764-4063-7700.1.pdf>
29. [Kato, S., V. Galán-Muros and T. Weko \(2020\). The emergence of alternative credentials. OECD Education Working Papers, No. 216, OECD Publishing, Paris.](#)
30. <https://doi.org/10.1787/b741f39e-en>
31. [Lantero, L., Finocchietti, C., & Petrucci, E. \(2021\). Micro-credentials and Bologna key commitments: State of play in the European higher education area.](#)
32. https://microcredentials.eu/wp-content/uploads/sites/20/2021/02/Microbol_State-of-play-of-MCs-in-the-EHEA.pdf
33. [Leaser, D., Jona, K. and Gallagher, S. \(2020\), Connecting Workplace Learning and Academic Credentials via Digital Badges. New Directions for Community Colleges, 2020: 39-51. https://doi.org/10.1002/cc.20396](#)

34. McGreal, R., Olcott, D. A. (2022). Strategic reset: micro-credentials for higher education leaders. Smart Learn. Environ. 9, 9
35. <https://doi.org/10.1186/s40561-022-00190-1>
36. Mikulec, B. (2017). Impact of the Europeanisation of education: Qualifications frameworks in Europe. European Educational Research Journal, 16(4), 455–473.
37. <https://doi.org/10.1177/1474904116673645>
38. OECD (2021), OECD Skills Outlook 2021: Learning for Life, OECD Publishing, Paris, <https://doi.org/10.1787/0ae365b4-en>.
39. Uggeri, M, & Barlassina, L. (2019). Challenges and opportunities of micro-credentials in Europe.
40. <https://microcredentials.eu/wp-content/uploads/sites/20/2019/12/WP3-Interviews-with-Key-Stakeholders-Decision-Makers-Overall-Summary-Report.pdf>
41. UNESCO (2022). Towards a common definition of micro-credentials.
42. <https://unesdoc.unesco.org/ark:/48223/pf0000381668>
43. UNESCO-UNEVOC. (2022). Dynamic TVET Country Profiles: Germany. Dynamic TVET Country Profiles. Retrieved May 4, 2023, from
44. <https://unevoc.unesco.org/home/Dynamic+TVET+Country+Profiles/country=DEU>

5 National Qualification Framework in Spain

5.1 Understanding the role of the regional governments in HE in Spain

The educational competences in Spain are shared between the General State Administration (the Ministry for Higher Education) and the authorities of the Autonomous Communities (departments for education). The central education administration executes the general guidelines of the Government on education policy and regulates the basic elements or aspects of the system, whereas the regional education authorities develop the State regulations and have executive and administrative authority for managing the education system in their own territory.

The Spanish university system was regulated by State Organic Act 4/2007 (LOMLOU), amending Organic Act 6/2001 (LOU) on Universities until March 2023. From this date, it is regulated by the Organic Law for the University System, Law 2/2023. The Spanish government is responsible for ensuring the consistency and uniformity of the education system as a whole. A series of royal decrees set out more detailed aspects on the responsibilities of the national Administration.

The Catalan autonomous community has authority for the creation, modification and elimination of programmes in both public and private universities, and also for the core funding of public universities. These aspects are regulated by the Catalan Law on Universities (Law 1/2003, LUC). This law will require some changes in the near future in order to adapt to the new state law.

According to State regulations, Catalonia is responsible for funding HEIs, and Agency for Quality Assurance in the Catalan University System (AQU Catalunya) is responsible for Quality Assurance of Higher Education in Catalonia including verification/accreditation. The body in charge of assuring this functional coordination at the higher education level is the *Conferencia General de Política Universitaria* (General Conference for Higher Education Policy), made up of the autonomous communities' ministers for education and the minister of education of the central government.

5.2 The Structure of Higher Education in Spain

Higher education comprises university, art and professional studies. University education is provided in universities. Art studies and advanced vocational training are provided in the same institutions as those offering intermediate vocational training (secondary studies).

5.2.1 University education

The adaptation of the structure of Spanish university education to the European Higher Education Area (EHEA) was completed in 2010 (2001 Act on Universities and several Royal Decrees, especially, RD 1393/2007 and RD 99/2011).

Each university designs the organization of the academic year and includes it in their bylaws. The workload in a full-time academic year of formal education is 60 ECTS. As a general rule, the university academic year has 220 teaching days and is divided into two semesters (30 ECTS each):

- First semester: it runs from the beginning of the academic year, mid-September, to the end of January or beginning of February, when students sit the final examinations for the subjects taken during the first semester and the partial examinations for annual subjects.
- Second semester: it extends from the beginning of February to the end of May. The examinations for this semester, as well as final examinations for annual subjects, are sat in June
- University education is organized into three cycles: **Bachelor** (level 2), **Master** (level 3) and **Doctorate** (level 4).

5.2.2 Art education

Advanced Artistic Education includes Music, Dance, Performing Arts, Preservation and Restoration of Cultural Heritage, Plastic Arts and Design. They are considered specialist education. These study programs are delivered by both public and private non-university institutions.

PROVISION	NAME	ADVANCED STUDIES DELIVERED
Artistic Education	Higher conservatories or higher schools of Music and Dance	Music and Dance Education
	Higher schools of Performing Arts	Performing Arts Education
	Higher schools for the Preservation and Restoration of Cultural Assets	Preservation and Restoration of Cultural Assets Education
	Higher schools of Design	Design Education
	Higher schools of Plastic Arts	Plastic Arts and Design Education

5.2.3 Advanced Vocational Training

Advanced Vocational Training is organized in training cycles, which have a modular structure. It includes a vocational module, which requires the preparation of a project during the last stage of the training cycle. The different training cycles are related to any of the 26 professional families established in the National Catalogue for Professional Qualifications⁸.

Vocational training is provided both in public and private education institutions, authorized by the Catalan Government. Students having successfully completed advanced vocational training are awarded an **Advanced Technician** professional qualification within **EQF level 5** (Short cycle in QF-EHEA⁹). The same award applies to Sport and Plastic Arts and Design Education (considered specialist education; see the Arts Education section).

The most significant professions in Spain are organised by professional families and levels as established by Royal Decree 1128/2003¹⁰. The National Catalogue for Professional Qualifications (CNCP)

⁸ https://incual.educacion.gob.es/documents/35348/80300/CNCP_listadoQ.pdf/67d33b4d-c885-49ba-8e07-15d433ba34a9

⁹ <https://europa.eu/europass/en/europass-tools/european-qualifications-framework>

¹⁰ <https://www.boe.es/buscar/pdf/2003/BOE-A-2003-17588-consolidado.pdf>

describes the structure and subjects of professional qualifications that are subject to recognition and accreditation. The catalogue is the responsibility of the National Institute for Qualifications (INCUAL) which was set up by Royal Decree 375/1999. This institute gives support to the General Council for Professional Training and has the mission to define, prepare and maintain the CNCP in Spain. Due to shared areas of powers in Spain, there is a homologous body in Catalonia, the Catalan Institute for Professional Qualifications.

The set of instruments and actions needed to promote and develop the integration of the professional training offer, through the National Catalogue for Professional Qualifications, make up the National System of Qualifications and Vocational Training (SNCFP). The whole system seeks to promote and develop the appraisal and accreditation of the respective professional competences in order to favour professional and social development and to fulfil the needs of the productive system.

5.3 Access to HE

5.3.1 Advanced Technician Degree

In order to access the qualification of Advanced Vocational Training (level 2), students must:

- Hold the **Bachillerato/Batxillerat certificate** (upper secondary education certificate, EQF4); or
- Hold a **technician diploma** (intermediate vocational training certificate, EQF4) and have completed a **preparatory course** of 700 hours; or
- Have passed an **entrance examination** to Advanced Vocational Training Cycles or a **university entrance examination for students over 25**; or
- Hold a **university degree or equivalent** (at least EQF6, QF-EHEA first cycle).

Bearing in mind that there are different admission paths, the Catalan Government allocate places according to the following criteria:

- Between 60% and 70% of places are set aside for students with a *Bachillerato/Batxillerat* certificate;
- Between 20% and 30% of places are reserved for students who have passed the preparatory course;
- Between 10% and 20% of places are held in reserve for students applying for admission through other paths.

5.3.2 Bachelor's Degree/Higher Degree in Arts

Students holding any of the following certificates may have access to official Bachelor programs:

- a) *Bachillerato/Batxillerat* certificate or equivalent certificate (EQF4);
- b) European Baccalaureate Certificate, International Baccalaureate Diploma, or *Bachillerato/Batxillerat* certificates, diplomas or studies from the education systems of the Member States of the European Union (EU) or from other States that have signed international

agreements with Spain that are applicable in this regard on a basis of reciprocity. In this case, students have to meet the academic requirements established in their countries of origin in order to have access to their universities;

- c) Advanced Technician certificate (level 1, EQF5; QF-EHEA short cycle) in any specialization, Plastic Arts and Design Advanced Technician certificate, or Sports Advanced Technician certificate or equivalent certificates;
- d) Certificates, diplomas or studies equivalent to the *Bachillerato/Batxillerat* certificate from the education systems of the Member States of the EU or from other States that have signed international agreements with Spain that are applicable in this regard on a basis of reciprocity. In this case, students do not meet the academic requirements established in their countries of origin in order to have access to their universities;
- e) Certificates, diplomas or studies, recognized or equivalent to the *Bachillerato/Batxillerat* certificate of the Spanish education system, obtained or completed in States that are not members of the EU and that have not signed international agreements for the recognition of the *Bachillerato/Batxillerat* certificate on a basis of reciprocity;
- f) Official Bachelor (level 2, EQF6; QF-EHEA first cycle) or Master's Degree (level 3, EQF7; QF-EHEA second cycle) or equivalent degree;
- g) Official Graduate, Technical Architect, Technical Engineer, Bachelor, Architect, Engineer Degrees, corresponding to the previous organization of university education or equivalent degree;
- h) Students with partial university studies followed in Spain or abroad, or students whose foreign degrees have not been recognized or declared equivalent in Spain but who want to continue studying in a Spanish university (in this case, students have to secure recognition of at least 30 ECTS credits from the relevant university);
- i) Students who were in a position to have access to university according to the organization of the Spanish education system prior to the 2013 Act on the Quality Improvement of Education;
- j) Certificates, diplomas or studies, aside from that equivalent to the *Bachillerato/Batxillerat* certificate, the Vocational Training Advanced Technician certificate, the Plastic Arts and Design Advanced Technician certificate, or the Sports Advanced Technician certificate of the Spanish education system, obtained or completed in Member States of the EU or in other States that have signed international agreements with Spain that are applicable in this regard on a basis of reciprocity. In this case, students have to meet the academic requirements established in their countries of origin in order to have access to their universities;
- k) People aged over 25, 40 and 45 who do not hold any qualification to gain access to university education by other means.

5.4 Recognition of previous studies

The Spanish Ministry for Higher Education has regulated the recognition of studies among the different study programmes, establishing the relations between the different higher education diplomas, and for the validation of ECTS credits, including Bachelor's Degrees and the Advanced Technician of Advanced Vocational Training.

5.4.1 Bachelor's Degree/Bachelor's in Arts

Universities are responsible for the recognition of official studies accrediting the Advanced Technician of Advanced Vocational Training, with the effects of allowing students into study programmes leading to university Bachelor's Degrees.

A minimum of 30 ECTS and a maximum of 60% of the total Bachelor ECTS will be recognised for students holding an **Advanced Technician Degree** (level 1) or having completed part of those studies.

A minimum of 36 ECTS and a maximum of 60% of the total Bachelor ECTS will be recognised for students holding a **Higher Degree in Arts** (level 2) or having completed part of those studies.

A minimum of 36 ECTS and a maximum of 60% of the total Higher Degree in Arts ECTS will be recognised for students holding a **Bachelor's Degree** (level 2) or having completed part of those studies.

The university can recognise an unlimited number of credits for students holding another Bachelor's Degree or having followed part of another study programme, though under no circumstances can the Bachelor's Degree final-year project (6-30 ECTS) be recognised.

Moreover, **15% of the total Bachelor's Degree credits** can be recognised by accrediting prior professional activity.

5.4.2 Master's Degree/Master's Degree in Arts

In order to apply for admission to Master's programs, candidates must hold an official university degree or Higher Degree in Arts (EQF6, QF-EHEA first cycle), issued by a Spanish university or by a higher education institution within the European Higher Education Area (EHEA), which qualifies for admission at this level.

The education institutions can recognise an unlimited number of credits for students holding another Master's Degree or having followed part of such studies, though under no circumstances can the Master's thesis (6-30 ECTS) be recognised.

Moreover, **15% of the total Master's Degree credits** can be recognised by accrediting prior professional activity.

5.4.3 PhD programmes

Candidates must hold a Bachelor's Degree, or equivalent, and a Master's Degree, or equivalent, provided they have completed at least 300 ECTS credits in the two types of programs as a whole.

Candidates with a previous PhD may also apply.

5.5 Spanish Qualification Framework for Higher Education

National qualifications frameworks describe what learners should know, understand and be able to do on the basis of a given qualification. According to Hanf and Hippach-Scheneide¹¹, “National qualifications frameworks are structures for developing, describing and systematising the relationships between qualifications. An NQF takes all of a country's formally recognized qualifications and arranges them in a clearly defined structure. In this context, qualifications are understood as sets of certified or documented skills – with no regard given to the respective learning path”.

NQF are important, especially for the development of micro-credentials:

- NQF are important instruments in **achieving comparability and transparency within the EHEA** and facilitating the movement of learners within, as well as between, higher education systems;
- NQF should also **help HEIs to develop modules** and study programmes based on learning outcomes and credits;
- NQF should **improve and facilitate the recognition of qualifications** as well as all forms of prior learning;
- NQF **supports the development and accreditation of study programmes**.

The value of an NQF lies in its potential to contribute to policy goals such as lifelong learning, recognition of skills, or improving the quality of education and training; therefore, its design should relate to the goals which it is intended to support and to the context in which it will operate. It is unhelpful to think of the NQF as an entity with fixed or universal characteristics – other than the need to establish a set of levels and criteria for registering and allocating qualifications to these levels.

The Spanish Qualification Framework for Higher Education is published in the Royal Decree RD 1027/2011¹² and it is of mandatory compliance. The RD 96/2014¹³ introduces some modifications due to some changes in the legislative framework for higher education in Spain. This framework in Spain is known as MECES (*Marco Español de Calificaciones para la Educación Superior*).

It has 4 levels based on the Dublin Descriptors¹⁴, developed by the Joint Quality Initiative (an informal network of Ministries and Quality Assurance Agencies from Austria, Belgium, Denmark, Germany, Ireland, Italy, The Netherlands, Norway, Spain, Sweden, Switzerland and United Kingdom). They consist of the cycle descriptors (or “level descriptors”) presented in 2003 and adopted in 2005 as the Qualifications Framework of the European Higher Education Area.

MECES refers to ECTS expectations and is focused on learning outcomes and competence levels.

The following table shows the Spanish NQF for HE.

¹¹ Hanf, G.; Hippach-Schneider, U.: What purpose do national qualifications frameworks serve? - A look at other countries. In: BWP 34 (2005) SE, S. 9-14. URL: <https://www.bwp-zeitschrift.de/dienst/publikationen/en/1077>

¹² <https://www.boe.es/boe/dias/2011/08/03/pdfs/BOE-A-2011-13317.pdf>

¹³ <https://boe.es/boe/dias/2014/03/05/pdfs/BOE-A-2014-2359.pdf>

¹⁴ https://www.aqu.cat/doc/doc_24496811_1.pdf

LEVELS		QUALIFICATIONS
1	Advanced Technician	- Advanced Technician in Vocational Training - Advanced Technician in Plastic Arts and Design - Advanced Technician in Sports Education
2	Bachelor's Degree	- University Bachelor's Degree - Bachelor's Degree in Arts
3	Master's Degree	- University Master's Degree - Master's Degree in Arts - Bachelor's Degree of at least 300 ECTS credits including at least 60 ECTS credits at Master's level
4	Doctoral Degree	- Doctoral Degree (PhD)

5.6 Catalan Higher Education Qualification Framework

The **Qualifications Framework** is an instrument for the development and classification of qualifications according to a set of criteria for specific levels of achieved learning. It is based on knowledge, skills and competences (so-called KSC scheme), learning outcomes and credit ranges. Its aim is to integrate and coordinate national qualifications and improve transparency with regard to the labour market and civil society.

For the description of the content for each level, the KSC type is adopted, meaning Knowledge, Skills and Competences. The KSC category are related to learning outcomes or outputs, irrespective of the acquisition routes involved, rather than learning inputs.

Knowledge includes theory and concepts, as well as tacit knowledge gained as a result of the experience of performing certain tasks.

Skills are usually used to refer to a level of performance, in the sense of accuracy and speed in performing particular tasks (skilled performance).

Competence is generally understood as the ability to demonstrate in a work context, the necessary skills (functional competences), usually with appropriate basic knowledge (cognitive competences).

1. Knowledge

- a) Kind of knowledge
- b) Depth, breadth and range of knowledge

2. Skills

- c) Cognitive skills
- d) Creative skills
- e) Problem-solving
- f) Technical and practical skills
- g) Information/communication

3. Competences

- h) Learning work setting
- i) Professional work setting

5.7 Specifications for each level

5.7.1 Level 1, Advanced Technician

Level 1 (Advanced Technician) of the Spanish Qualifications Framework for Higher Education corresponds to **level 5** of the European Qualifications Framework (EQF) and to the short cycle level in the Qualifications Framework of the European Higher Education Area (QF-EHEA).

CHE-QF LEVEL 1 CRITERIA FROM MECES (REORGANISED)	
Aim	Graduates at this level will have broad knowledge and skills for highly skilled work and/or further learning
Knowledge	Graduates at this level will have demonstrated expertise in a professional or study area with critical understanding for the integration and transfer of knowledge as well as the development of creativity, initiative and entrepreneurship.
Skills	Graduates at this level will possess the ability to analyze information needed to evaluate and respond to expected and unexpected situations by seeking informed, creative and innovative solutions within a field of study or profession; be able to communicate their knowledge, ideas, skills and activities in professional contexts to peers, supervisors, clients and persons under their responsibility.
Competences	Graduates at this level will implement and integrate their artistic, technological or sports knowledge in the definition and development of working procedures in the artistic or other workplace, independently and with responsibility for coordinating and supervising technical work; possess the strategies necessary to advance their training independently with maturity to innovate in implementation and progress in learning and training to higher levels.

5.7.2 Level 2, Bachelor's Degree

Level 2 (Bachelor's Degree) of the Spanish Qualifications Framework for Higher Education corresponds to **level 6** of the European Qualifications Framework (EQF) and to the first cycle level in the Qualifications Framework of the European Higher Education Area (QF-EHEA).

CHE-QF LEVEL 2 CRITERIA FROM MECES (REORGANISED)	
Aim	Graduates at this level will have broad knowledge and skills for highly skilled work and/or further learning

Knowledge	<p>Graduates at this level will have acquired advanced knowledge and demonstrated an understanding of the theoretical and practical aspects and methodology of work in their field of study with a depth that reaches the forefront of knowledge.</p>
Skills	<p>Graduates at this level will be able through developed arguments or procedures and, supported by them, to apply their knowledge, understanding and skills in the troubleshooting of complex or professional and specialist work environments that require the use of creative and innovative ideas;</p> <p>have the ability to gather and interpret data and information on which to base their conclusions including, where necessary and appropriate, the reflection on social, scientific or ethical issues within their field of study;</p> <p>be able to cope in complex situations or those that require the development of new solutions in both the academic and occupational or professional aspects in their field of study.</p>
Competences	<p>Graduates at this level will have the ability to communicate to all audiences (specialist or not) clearly and precisely, knowledge, methodologies, ideas, problems and solutions in the area of their field of study;</p> <p>be able to identify their own training needs in their field of study and work, or professional environment, and to organize their own learning with a high degree of autonomy in all kinds of contexts (structured or not).</p>

5.7.3 Level 3, Master's Degree

Level 3 (Master's Degree) of the Spanish Qualifications Framework for Higher Education corresponds to **level 7** of the European Qualifications Framework (EQF) and to the **second cycle level** in the Qualifications Framework of the European Higher Education Area (QF-EHEA).

CHE-QF LEVEL 3 CRITERIA FROM MECES (REORGANISED)	
Aim	Graduates at this level will have specialist knowledge and skills for research and/or professional practice and/or further learning
Knowledge	Graduates at this level will have acquired advanced knowledge and demonstrated, in the context of scientific and technological research or a highly specialist field, a detailed and informed understanding of the theoretical and practical aspects of the methodology and work in one or more fields of study
Skills	Graduates at this level will be able to apply and integrate their knowledge and understanding of this with sound science and problem-solving abilities in new and imprecisely defined environments, including multidisciplinary contexts for both researchers and highly skilled professionals;

	<p>be able to evaluate and select appropriate scientific theory and the precise methodology from their fields of study to formulate judgements with incomplete or limited information including, where necessary and appropriate, a reflection on the social and ethical responsibilities linked to the solution proposed in each case;</p> <p>be able to predict and control the evolution of complex situations by developing new and innovative working methodologies tailored to a specific scientific, technological or professional research field, usually multidisciplinary, in which the activity takes place.</p>
Competences	<p>Graduates at this level will</p> <p>know how to clearly and unambiguously convey to a specialist or non- specialist audience results from science and technology or the scope of advanced innovation research and the most important results that are based on fundamentals;</p> <p>have developed enough autonomy to participate in research projects and scientific and technological collaborations within their scope, in interdisciplinary contexts and, where appropriate, with a high component of knowledge transfer;</p> <p>be able to take responsibility for their own professional development and specialization in one or more fields of study.</p>

5.7.4 Level 4, Doctoral Degree

Level 4 (Doctoral Degree) of the Spanish Qualifications Framework for Higher Education corresponds to **level 8** of the European Qualifications Framework (EQF) and to the **third cycle level** in the Qualifications Framework of the European Higher Education Area (QF-EHEA).

CHE-QF LEVEL 4 CRITERIA FROM MECES (REORGANISED)	
Aim	Graduates at this level will have systematic and critical understanding of a complex field of learning and specialist research skills for the advancement of learning and/or for professional practice
Knowledge	<p>Graduates at this level will</p> <p>have acquired advanced knowledge in the frontiers of information and, in the context of internationally recognized scientific research, have demonstrated a thorough, detailed understanding based on the theoretical and practical aspects of scientific methodology in one or more areas of research.</p>
Skills	<p>Graduates at this level will</p> <p>have shown that they are able to design a research project with which to carry out a critical analysis and evaluation of imprecise situations where they apply their contributions, knowledge and methodology in a synthesis of new and complex ideas that produce a deeper understanding of the research context in which they work;</p>

	<p>have made an original and significant contribution to scientific research in their field of knowledge and this contribution has been recognized as such by the international scientific community;</p> <p>have demonstrated in their specific scientific context that they are able to make progress in cultural, social and technological aspects, as well as to encourage innovation in all areas in a knowledge-based society.</p>
<p>Competences</p>	<p>Graduates at this level will</p> <p>have shown that they are able to develop their research activities with social responsibility and scientific integrity;</p> <p>have developed sufficient autonomy to manage and lead teams and innovative research projects and scientific, national or international collaborations within their scope, in multidisciplinary contexts and, where appropriate, with a high component of knowledge transfer;</p> <p>have justified their ability to participate in scientific discussions that take place internationally in the field of knowledge and to disseminate the results of their research to all kinds of audiences.</p>

6 Proposal for a best model of linking MCs to NQFs

There are concerns about the myriad of micro-credential providers which raises concerns on the credibility and added values of the micro-credentials, and the replacement of macro-credentials with micro-credentials. Actually, the rise of micro-credentials does not necessarily mean the replacement of traditional degrees, but brings in the possibility of supplementing degrees and similar qualifications with new and shorter forms of provision that fit new needs of learners and the labour market. For instance, a micro-credential might consist of a brief and specific segment of technical education that does not attain the necessary depth and complexity to be aligned with NQFs levels. Likewise, forcefully fitting new and inventive micro-credentials into the existing NQF may impede innovation and fail to offer the complementary educational pathways that certain learners seek.

Despite this limitation, the question of how micro-credential fit remains? Following the European Common Micro-credential Framework, this report recommends linking micro-credentials issued by HEIs to NQF by integrating or stacking into qualification programs between level 6 to 8. It is noteworthy to mention that linking micro-credentials to NQFs levels does not equivalence with qualifications in the levels. Instead, it should serve as a reference point for stacking micro-credentials into existing formal qualifications. In the case of micro-credentials provided by non-university institutions, directly linking such micro-credentials to the NQFs is not recommended because HEIs and non-university institutions may have different regulatory and legal frameworks. Therefore, non-university providers could partner with accredited HEIs to seek endorsement of and ensure compliance with higher education quality assurance processes.

Based on a previously mentioned, one approach of linking MCs to NQFs could be content-based approach: if majority of some MCs content belongs to the content held at the HEI at the study cycle of level 6.2, then also that MCs could be link **by content, and not by descriptors**, to the level 6.2.