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1. European Transparency and Mobility Lifelong Learning Instruments

1.1 The European Qualifications Framework (EQF) for Lifelong Learning

The European Qualifications Framework for Lifelong Learning¹ is a common European reference framework which makes it possible for European countries to compare their qualifications. On the basis of a common reference framework, they will improve the transparency, comparability and portability of citizens' qualifications in the different Member States.

This should support learners and workers interested to move between countries or change jobs or move between educational institutions within EU.

The primary users of the EQF are bodies in charge of national and/or sectoral qualification systems and frameworks. Once they have related their respective systems to the EQF, the EQF will help individuals, employers and education and training providers to compare individual qualifications from different countries and education and training systems. In practice, it will be used as a translation device for qualifications. This will promote students and workers' mobility and recognition of their professional competences.

As an instrument for the promotion of lifelong learning, the EQF encompasses general and adult education, vocational education and training as well as higher education. The eight levels cover the entire span of qualifications from those achieved at the end of compulsory education to those awarded at the highest level of academic and professional or vocational education and training. Each level should in principle be attainable by way of a variety of education and career paths.

The EQF uses 8 reference levels based on learning outcomes (defined in terms of knowledge, skills and competences). The EQF shifts the focus from input (lengths of a learning experience, type of institution) to what a person holding a particular qualification actually knows and is able to do. Shifting the focus to learning outcomes:

- Promotes a better correspondence between the needs of the labour market and education and training.
- Facilitates the validation of learning acquired through different from formal education (non- formal and informal learning).
- Facilitates the transfer and use of qualifications among different countries and education and training systems.

¹ Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning



1.2 The European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET)

In order to exit the economic crisis, Europe needs smart growth, which requires better skilled people. In this context, vocational education and training (VET), has an important role to play as highlighted in a series of recent strategy papers of the Commission.²

The EQAVET Recommendation³ establishes a reference instrument to support Member States to promote and monitor continuous improvement of VET systems. The framework comprises a cycle of four phases (planning, implementation, evaluation and review); each supported by quality criteria and indicative descriptors, to be applied at the VET-system, provider and qualification awarding levels.

The framework should be regarded as a "toolbox", from which the various users may choose those elements that they consider most relevant to their specific systems. The indicators proposed for measuring VET quality improvement concern data such as investment in training of teachers and trainers, participation, completion and placement rate in VET programmes, utilization of acquired skills at work place, unemployment rate, prevalence of vulnerable groups, mechanisms to identify training needs in the labour market and schemes used to promote access to VET.

As regards the use of indicators, practices across countries are quite varied. While some indicators appear to be used by a majority of Member States (e.g. participation and completion rate in VET programmes) other key outcome oriented indicators, such as 'utilisation of skills at the workplace' or 'share of employed learners at a designated point in time after completion of training' are less used, even though they could provide key evidence on how to ensure a better alignment with labour market needs. In general, these indicators are the ones for which data are the most difficult to retrieve.

The reason of it seems to be the difficulty of comparing national QA measures with the EQAVET descriptors because the descriptors are very general and often cover aspects that are not covered by specific QA measures but feature rather in VET policies and policy-making approaches.

Furthermore, national quality assurance measures often are not presented in comprehensive documents and do not necessarily adopt the EQAVET structure. Countries mostly describe their quality assurance systems by making reference to internal and external evaluation of VET providers, system level evaluation for policy development purposes, and the quality of qualification design and award.

Direct use of EQAVET as a reference to describe national measures may also prove difficult because EQAVET proposes different terminologies for quality of the VET system and at VET provider level.

EQAVET has contributed to advancing a quality culture in VET in European countries, as well as to its practical implementation, through the development notably of quality operational measures within the EQAVET network.

² Recently the European Commission presented a report to the European Parliament and the Council on the implementation of the EQAVET Recommendation.

³ Recommendation of the European Parliament and the Council of 18 June 2009 on the establishment of a European Quality Assurance Reference Framework for Vocational Education and Training.



The introduction of the EQAVET Recommendation in 2009, on the one hand has supported improvements in Quality Assurance and the development of a culture of quality management in vocational education and training. On the other, it emphasized the importance of work-based learning; learning outcomes; pedagogy focused on meeting the needs of individual learners; opportunity for learners to achieve results through a wider range of learning contexts.

The EQAVET Network considered necessary to ensure that the constantly evolving developments are embedded in the EQAVET-aligned approaches, at both system and VET providers' levels.

The changes in VET lead the legislation to introduce new priorities and practices. The EQAVET Network is committed to supporting its members by producing up-to-date guidance on Quality Assurance.

Between 2015 and 2017 new indicative descriptors and additional text to complement the existing indicative descriptors in the EQAVET Recommendation have been developed by members of the Network.

These indicative descriptors and the associated guidelines are often referred to as EQAVET+⁴. The aim of the Working Group was to complete the European Quality Assurance Reference Framework through the introduction of new indicative descriptors or the integration of few additional information to some already existing. The purpose of EQAVET+ is to reflect the emerging policy priorities and to provide support to those policy areas and VET offers, not yet adequately represented in the EQAVET Recommendation.

1.3 European Credit system for Vocational Education and Training (ECVET)

The European Credit system for Vocational Educations and Training (ECVET)⁵ aims to give people greater control over their individual learning experiences and makes it more attractive to move between different countries and different learning environments.

The system aims to facilitate the validation, recognition and accumulation of work-related skills and knowledge acquired during learning experiences in another country or in different contexts. It should ensure that these experiences contribute to vocational qualifications.

ECVET aims for better compatibility between the different vocational education and training (VET) systems in place across Europe and their qualifications.

ECVET is based on:

Learning outcomes.

Learning outcomes are statements of what a learner knows, understands and is able to do on completion of a learning process. Usually, qualifications frameworks indicate the overall level of learning outcomes in a qualification. For ECVET purposes the European Qualifications Framework (EQF) is used as a reference for levels.

Learning outcomes are developed in the process of designing qualifications. There are different approaches to identifying and describing learning outcomes depending on the qualifications system.

⁴ <https://www.eqavet.eu/EU-Quality-Assurance/For-VET-Providers/Eqavetplus>

⁵ Recommendation of the European Parliament and of the Council of 18 June 2009 on the establishment of a European Credit system for Vocational Education and Training (ECVET).



Learning outcomes may be acquired through a variety of learning pathways, modes of delivery (school-based, in-company, workplaces etc.), in different learning contexts (formal, non-formal and informal) or settings (i.e. country, education and training system).

Units of learning outcomes.

A unit is a component of a qualification, consisting of a coherent set of knowledge, skills and competence that can be assessed and validated.

Units enable progressive achievement of qualifications through transfer and accumulation of learning outcomes. They are subject to assessment and validation which verify and record that the learner has achieved the learning outcomes expected.

Depending on the existing regulations, units may be common to several qualifications or specific to one particular qualification. Units are accumulated based on the requirements to achieve qualifications. These requirements may be more or less restrictive depending on the tradition and practice of the qualifications system and the way qualification standards are designed.

ECVET points, which provide additional information about units and qualifications in a numerical form. ECVET points are a numerical representation of the overall weight of learning outcomes in a qualification and of the relative weight of units in relation to the qualification.

Together with units, descriptions of learning outcomes and information about the level of qualifications, ECVET points can support the understanding of a qualification. The number of ECVET points allocated to a qualification, together with other specifications, can indicate for example, that the scope of the qualification is narrow or broad.

The number of ECVET points allocated to a unit provides the learner with information concerning the relative weight of what s/he has accumulated already. It also provides the learner with information concerning what remains to be achieved.

Credit for assessed Units.

Credit for learning outcomes designates individuals' learning outcomes which have been assessed and which can be accumulated towards a qualification or transferred to other learning programmes or qualifications. Credit refers to the fact that the learner has achieved the expected learning outcomes which have been assessed positively and the outcome of the assessment was documented in a personal transcript. Based on this documentation, other institutions can recognise learners' credit.

Credit is a different concept than ECVET points.

While credit designates the learning outcomes the learner has achieved, ECVET points provide information about the qualification and the units. In other words while credit is related to a person and his/her personal achievement (credit does not exist on its own without someone having achieved it), ECVET points are linked to the qualification structure and description (independent of whether someone has achieved the qualification or not).

Credit can be transferred and accumulated if the competent institution recognises that what the learner has achieved is relevant and can be taken into account as part of the qualification the learner is preparing (or



seeks recognition) for. ECVET points provide information about the credit the learner has transferred and accumulated (e.g. what is the relative weight of units the learner has already achieved).

Mutual trust and partnership among participating organisations are expressed in memoranda of understanding and learning agreements:

A Memorandum of Understanding is an agreement between competent institutions which sets the framework for credit transfer. It formalises the ECVET partnership by stating the mutual acceptance of the status and procedures of competent institutions involved. It also establishes partnership's procedures for cooperation.

A learning agreement is an individualised document which sets out the conditions for a specific mobility period. It specifies, for a particular learner, which learning outcomes and units should be achieved together with the associated ECVET points.

The learning agreement also lays down that, if the learner achieves the expected learning outcomes and these are positively assessed by the "hosting" institution, the "home" institution will validate and recognise them as part of the requirements for a qualification. Therefore the learning agreement constitutes a commitment to the learner that his/her achievement, if in line with the expectations, will be recognised.

Personal transcript of the candidate which confirms the positive assessment of the learning outcomes and skills acquired during a (short or long-duration) mobility period by the individual learner in formal, non-formal or informal learning, including possible VET credits.

2. Making learning visible validation and recognition of learning outcomes

Validation is defined as a confirmation by a competent body that learning outcomes (knowledge; skills and competences) acquired by an individual in a formal, non-formal or informal setting have been assessed against predefined criteria and are compliant with the requirements of a validation standard.

The validation methods accepted for a given qualification have to be specified within the description of the qualification and have to be adequate to validate the learning outcomes declared by the qualification. Validation typically to certification.⁶

2.1 Formal, non-formal and informal learning

2.1.1 What formal, non-normal and informal learning mean?⁷

Formal education – learning that occurs in an organised and structured environment (such as in an education or training institution or on the job) and is explicitly designated as learning (in terms of objectives, time or resources). Formal learning is intentional from the learner’s point of view it typically leads to a kind of certification.

Non-formal learning – learning embedded in planned activities not explicitly designated as learning (in terms of learning objectives, learning time or learning support). Non-formal learning is intentional from the learner’s point of view.

Non-formal learning outcomes may be validated and may lead to certification and is sometimes described as structured learning.

Informal learning – learning resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. Informal learning is in most cases Unintentional from the learner’s perspective. Informal learning outcomes may also be validated and certified and it is also referred to as experiential or incidental/random learning.

2.1.2. EU policies regarding the validation of learning

Prior to 2010, various steps had been taken to stimulate and guide developments in the area of validation of formal, informal and non-formal learning in Member States, including the 2004 Common European principles on identification and validation of non-formal and informal learning, the 2006 Council Resolution on the recognition of the value of non-formal and informal learning within the European youth field, the 2008 Recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning, the Council Resolution on European Cooperation in the youth field (2010- 2018), and the 2009 European guidelines for validating non-formal and informal learning. These initiatives underlined the importance of validation, supported the design and implementation of high quality validation policies and procedures and facilitated the linkage of learning outcomes achieved through non-formal and informal learning and existing qualifications.

⁶ Terminology of European education and training policy, 2nd edition, A selection of 130 key terms, Cedefop 2014

⁷ Terminology of European education and training policy 2nd edition, A selection of 130 key terms Cedefop 2014

Moreover, in 2012, the Council of EU issued the Recommendation on the validation of non-formal and informal learning⁸. This calls for Member States to put in place, by 2018, arrangements to enable individuals to have their knowledge, skills and competences acquired via non-formal and informal learning validated, and to be able to obtain “a full qualification, or, where applicable, part qualification on the basis of validated non-formal and informal learning experiences”. The Recommendation allows flexibility in the implementation of validation arrangements and encourages Member States to develop provisions for different stages of validation either separately or in combination. The Recommendation also lays out a number of principles to frame the development of validation.

2.2 Methods of validation of learning outcomes

Validation consists of four distinct phases:

- a) identification of particular experiences of an individual;
- b) documentation to make visible the individual’s experiences;
- c) formal assessment of these experiences; and
- d) Certification of the results of the assessment which may lead to a partial or full qualification.

These phases are mixed and balanced in different ways, reflecting the particular purpose of each validation arrangement. When working towards a formal qualification, the robustness and credibility of the assessment stage are crucial. In other cases, for example in relation to voluntary work, more emphasis is given to identification and documentation, less to formal assessment and certification. However, the four phases are likely to be present in all validation arrangements. The purpose of validation is to produce proof of learning, potentially to be exchanged into future learning and/or work. This requires identification, documentation and assessment of the learning in question to refer to an agreed and transparent reference point or standard.

In validation for formal qualifications, official standards used by the education and training system/institution will largely define the requirements of the validation process. In other settings, as when mapping competences in enterprises, internal and less formal reference points will be used. While the same elements of identification, documentation, assessment and certification will be found in both cases, their relative ‘weighting’ differs significantly. Overall, the extent to which validation process outcomes can be transferred and exchanged very much depends on the extent to which the resulting document, portfolio, certificate or qualification is trusted by external parties and stakeholders, which reflects the way the four phases have been designed and carried out.

Validation arrangements need to be presented in a way that clarifies their main purpose and allows individuals to choose the form best suited to their particular needs. A person not interested in acquiring a formal qualification should be able to opt for a solution giving more emphasis to identification and documentation phases. Since validation has been found to influence positively individuals’ self-awareness and self-esteem, it should be about individual choice: arrangements must be designed to allow the individual to opt for the most cost-efficient solutions, possibly for limited documentation rather than full, formal certification.

The validation methods accepted for a given qualification have to be specified within the description of the qualification and have to be adequate to validate the learning outcomes declared by the qualification.

Validation methods proposed for the IoT4SMEs qualifications:

Debate – is an activity used to generate discussion and bring out participant understanding regarding IoT issues? The facilitator can set up a debate in a few different ways, depending on the group and the topic to be covered.

⁸ Council Recommendation of 20 December 2012 on the validation of non-formal and informal learning.



One possibility is to generate a controversial topic to be debated, then randomly assign participants to argue “for” or “against” the statement/ topic.

The other main possibility is to state the topic and allow participants to self-select whether they are for or against it, forming groups based on personal and professional interests and background.

Participants generally enjoy debates and do not recognize them as validation methods, which helps them to feel freer to express their opinions than with many other methods.

Exit Interview - is an interview scheduled with a facilitator and each participant at the end of training? It may include asking validation questions of each participant separately to understand the acquired learning outcomes.

Exit Interview can take approximately 1 hour for each participant, depending on the number of validation questions and role plays to be included. Suggestions for reducing time required for these methods are included below in Tips for Facilitator.

While Exit Interviews might be more time consuming than other methods, they are the most effective ways to validate individual participant learning in cases where it is necessary to have a detailed assessment about each participant. For example, if each participant is going to be working independently at different locations, etc, it may be necessary to validate that each person has the needed knowledge and skills to continue effectively. These validation methods also allow participant-specific mentoring programs to be designed to enhance progress.

Declarative methods - are based on individuals’ independent identification and recording of competences (sometimes against given criteria and sometimes not). However, the declaration is normally signed (verified) by a third party. The assessment results are then recorded, for instance in an individual book of competences but this could also be in a CV or a similar document. Declarative methods are often well suited for formative assessments or as preparation for identification of competences before summative assessment take place.

In practice, the validity and reliability of these methods depends on the existence of clear guidelines or standards for the individual to use, on the provision of support or ‘mentoring’ during the preparation phase, and on the individual’s ability to provide a realistic assessment of his/her own competences.

This method should be used together with other assessment methods since it can rarely lead to clear mapping to existing qualifications or standard frameworks, in particular in the absence of guidance, and rarely lead to the award of qualifications.

Observations - means extracting evidence from candidates while they perform everyday tasks. This approach, judged by a neutral assessor, has relatively greater usage in the private sector, but is spreading to other areas as well.

The validity of observations can be high and can give access to competences difficult to capture through other means. Observations have the advantage that sets of skills can be assessed simultaneously, and measurement be valid. They are also fair, as people are not detached from their usual work environment and placed under additional stress before the assessment. However, observations are not always possible due to characteristics, safety, time constraints and other factors. They may also be time-consuming, in particular if there is more than one assessor. Further, because observations are grounded in everyday practice, information obtained through them for assessment of an individual may be context-specific rather than subject to generalisation.



Simulations - when individuals are placed in a situation close to real-life scenarios to have their competences assessed. In some cases they are used when observations are not possible. Their use, however, is constrained by several aspects, particularly costs. Some situations cannot be observed in real life, for security or other reasons: examples are reaction of aircraft or bus pilots to extreme weather conditions or a motor/engine failure.

The use of simulations, in the same way as observations, scores high on validity. However, simulations can be more complex to organise and more expensive than other validation methods; they normally require a large amount of study and job analysis to be prepared properly. The higher the level of 'realism' of the simulation, the more effective the assessment will generally be. Simulations can solve part of the problems of observations undertaken at work as they can place individuals in various contexts, increase assessment validity. The reliability and fairness of this method are often considered high.

Evidence extracted from work or other practice - a candidate collects physical or intellectual evidence of learning outcomes from work situations, voluntary activities, family or other settings. This evidence then forms the basis of validation of competences by the assessor. Evidence from work can also include written work, such as essays or transcript reviews. Such evidence is different from observations in that the candidate selects what is to be assessed, and how that evidence has been produced is not necessarily observed by the assessor. The validity of the method may be lower than that of observations, unless it is complemented by checks confirming that the evidence is indeed the product of the work of the candidate.

Because of the way evidence is selected (by the learner), assessors need to be aware that they are likely to be judging the best of the work of the candidate, rather than his/ her average performance. The fairness of this method is generally deemed to be similar to that of observations. Evidence extracted from work is most often used in validating professional competences.

Tests and examinations - have the advantage of being familiar, socially recognised as valid and reliable. Tests are also relatively cheap and quick to administer, when compared to some of the other methods. Tests and examinations can be linked to education standards more straightforwardly than some other methods.

However, tests can be intimidating for those individuals who have had negative experiences in formal education or have poor verbal/writing skills. Since it was argued that this method measures relatively superficial knowledge and learning, and that some skills and competences acquired through nonformal and informal learning may not be picked up through this method, it is recommended to use this validation method in particular for capturing the level of knowledge in a specific field.

Portfolios - are one of the most complex and frequently used methods to document evidence for validation purposes. Portfolios aim to overcome the risk of subjectivity by introducing a mix of instruments to extract evidence of individuals' competences and can incorporate assessments by third parties. They provide the audience with comprehensive insights into the achievements and successes of the learner. There is evidence of a recent increase in the importance of portfolios. Some countries that provide national guidelines for validation, rather than prescribe validation methods, recommend a stage in the process which involves some form of assessment of the content of the portfolio by a third party (such as a jury) to ensure greater validity.

Introduction of third party assessment does not solve all problems. Quality assurance processes should be in place to ensure consistency and transparency of third party assessment and equality and fairness in the validation process for all candidates.

Portfolios can include evidence extracted through a combination of methods. It is argued that the kind of reflection and investigation associated with portfolio methods empowers people undergoing validation, which helps them



obtain jobs or choose appropriate further education. Portfolios can be developed to help disadvantaged people out of social exclusion or into employment by considering their specific characteristics.

Building a portfolio is a time-consuming exercise from the point of view of the applicant, but is nevertheless a popular method as candidates have the possibility to show their competences in a flexible and authentic way. The portfolio method can prove difficult for some and should be supported by relevant information and guidance. The most serious risk in preparing portfolios is lack of focus that can occur when applicants prepare them alone or with little mediation from a counsellor. Counsellor aid and sufficient time for self-reflection are, therefore, crucial to this method's effectiveness and fairness. In the process of self-assessment against curriculum standards, guidance should be at hand to explain the theoretical concepts and help the transfer from theory to practice.

In the IoT4SMEs Project, the Consortium agreed that an online test/examination will be the main method adopted. Each partner will design the assessment tools for the corresponding units developed, implementing a multiple choice questionnaire (20 questions each unit). The final test will include at least one question for each key learning outcome, chosen by the system, among a set of questions elaborated by partners. Learners will acquire the certification with the 60% of right answers.

2.3 Recognition of learning outcomes

The recognition of learning outcomes means the process of attesting officially achieved learning outcomes through the award of credit, units or qualifications.

Depending on the specific context, the validation and recognition of learning outcomes can be done in a single act or in two distinguished steps and by one or more organisations:

-In case the ET provider is competent (or responsible) also for recognising and awarding credit, the same organisation can not only validate but also recognise achieved learning outcomes, for example, by awarding a certificate.

-In case another organisation is competent (or responsible) for awarding units or qualifications, this organisation usually also has to be involved where it can be verified that rules governing training delivery and assessment have been fully complied with, such third party organisations will normally confirm that achieved learning outcomes can be accepted as part of an existing programme, unit or qualification, albeit taking the form of extra credit in some cases.

The recognition of non-formal and informal learning cannot be linked to the quality or formal recognition of the training programme, and should be focused mainly on the concrete competences that the individual can demonstrate. In these cases, it is necessary to set up specific validation and recognition mechanisms that are in line with official requirements regarding qualifications standards and at the same time, implement different tools and instruments for validating and recognizing learning outcomes. Regarding the IoT4SMEs qualifications, the recognition of learning outcomes shall be done in line with national requirements and considering the level of competency/responsibility of the ET Provider.