



ANALYSING AND COMPARING VET QUALIFICATIONS

VET qualifications must be relevant at national and local levels while opening the door to international comparability

Pressure on European education and training systems has increased in recent years, with technological and demographic trends reshaping demand for skills and qualifications and making lifelong learning a necessity, for both individuals and countries. Vocational education and training (VET) provision has to respond to rapidly changing labour market needs and to match qualification supply to skills demand. Improving its quality, relevance and agility is, therefore, at the heart of the European VET policy framework 2021-25, which emphasises the importance of international cooperation, learner and worker mobility and recognition of learning outcomes ⁽¹⁾.

To support the implementation of policies strengthening cross-country transparency and comparability of qualifications, Cedefop has conducted a study into methods for analysing and comparing the profile and content of VET qualifications; these still largely differ between European countries ⁽²⁾. This briefing note outlines the two main objectives addressed, as well as the solutions identified and their implications for researchers and policy-makers.

OBJECTIVES

1. Better comparison of VET qualifications

Traditionally, VET qualifications are developed by country authorities addressing mainly their own national and regional needs. This allows for direct dia-

⁽¹⁾ The current EU VET policy framework is essentially defined by the renewed [European skills agenda](#), the (first ever) [Council recommendation on vocational education and training](#), and the [Osnabrück declaration](#), with which the ministers responsible for VET in the EU Member States, the EU candidate countries and the EEA countries, social partners and the European Commission agreed on a new set of policy actions to complement and operationalise the vision and strategic objectives formulated in the Council VET recommendation.

⁽²⁾ **Profile:** structure and scope of a qualification; **content:** analytical description of the different parts forming a full qualification. A study was conducted in 10 countries (AT, BG, DK, FI, FR, IE, LT, NL, ES, UK) to identify possible methods for, and practical applications of, the analysis and comparison of qualifications. The two occupation IT technicians and health care assistants served as examples. (Cedefop, 2021, forthcoming).

logue between the users and suppliers of qualifications, ensuring overall relevance of training. In recent times, however, this approach has been challenged by sweeping technological changes and ever more globalised labour markets and supply chains. Skills and competences, while used locally, are increasingly shaped by global trends and the calls for wider comparability of the content of VET programmes and qualifications are multiplying ⁽³⁾. Cedefop's study addresses the challenges posed by the tensions between local needs and global demands, and opens possible ways forward to be discussed at political level.



2. Better feedback between work and VET

In the past few years, Cedefop has built up its skills intelligence capacity through the [analysis of online job vacancies](#), offering the capacity to generate fast and detailed information on labour market trends and European companies' skill needs as they unfold. At the same time, Cedefop has looked at the supply of

⁽³⁾ As illustrated by skills competitions like EuroSkills and WorldSkills, a core of VET skills and competences is shared and can indeed be compared internationally. Cedefop's methodological work in this field is carried out in close dialogue with WorldSkills.

knowledge, skills and competences, forecasting likely future developments of VET systems as they face new challenges and demands.

Good VET governance and quality assurance require strong feedback mechanisms between VET providers and labour market stakeholders. While a lot has been done to optimise the match between VET needs and supply, there is room for more targeted and ‘granular’ feedback at the level of single qualifications/programmes. More systematic dialogue between VET providers and labour market actors in this field can help ensure that:

- the learning outcomes expressed in curricula closely reflect labour market needs;
- the intentions of VET providers have been translated into traceable individual VET graduate skills;
- experiences at the workplace with the graduates are being fed back to VET providers.

Cedefop’s study on the analysis and comparison of VET qualifications (see footnote 2) directly supports this feedback loop: it proposes methods for collecting the views of labour market actors on qualifications’ fitness for purpose, promoting deeper understanding of the relationship between the learning outcomes intended by VET systems and actual outcomes as experienced in labour markets.

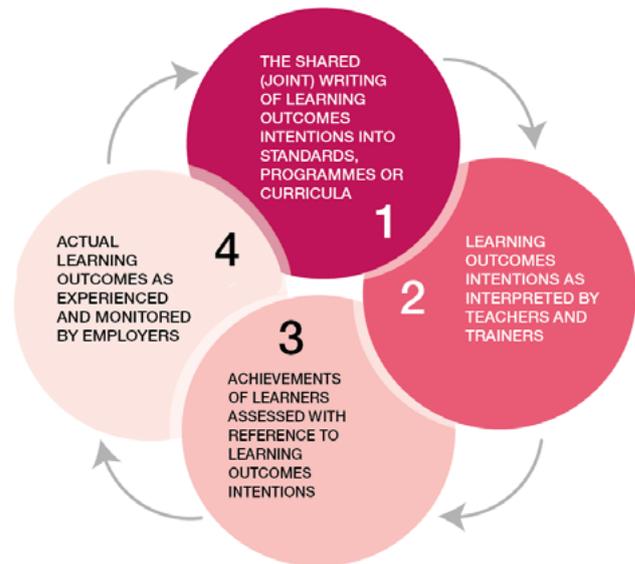
BOX 1. LEARNING OUTCOMES IN QUALIFICATION DESCRIPTIONS

Learning outcomes enable a breakdown of qualifications that can be applied in different national contexts. They offer stakeholders from different countries a common platform for the review and renewal of qualifications. As they sharpen our understanding of the content of qualifications, they allow us to calibrate and orient them in such a way that they open access, within and across borders, to labour markets and further learning, allowing people to ‘take their qualifications with them’.

Analysis and comparison of learning outcomes distinguish between intended and acquired outcomes: they allow the objectives set by the developers of a qualification to be compared with what a person is really able to do, as observed, say, by his/her employer. The intentions expressed in curricula will always have to be realised through learning and eventually tested in real work situations. Tracking gaps between intended and acquired learning outcomes is crucial for better matching qualifications to real labour market needs. This effort will have to be continuous, as needs change quickly, requiring swift responses.

Source: Cedefop (forthcoming).

FIGURE 1. THE FEEDBACK LOOP



Source: Cedefop (forthcoming).

GETTING TO THE BOTTOM OF VET QUALIFICATIONS

Understanding the profile and content of qualifications requires capturing their intentions and the way these are expressed through learning outcomes ⁽⁴⁾. This approach supports both the comparison of qualifications for mutual learning and efforts to close the feedback loop. For both, an in-depth analysis of the learning outcomes forming the basis of qualifications is needed.

The combined mapping of transversal skills listed for two occupations, IT technicians and healthcare assistants, carried out in 10 countries, makes it clear that countries’ qualifications share a fair amount of skills and competences. This proves that VET qualifications from different countries address roughly the same skill needs. At the same time, the comparison revealed a considerable degree of variation in the way countries describe these transversal skills. While most emphasised in their descriptions learning outcomes such as ‘interact with others’ and ‘follow safety precautions in work practices’, only a few listed ‘demonstrate curiosity’ or ‘foreign languages’.

Countries also differed in how they address occupation-specific skills. While some operate with detailed and lengthy lists of technical skills to be mastered, others use broader occupational and technical skills, this latter approach being based on the idea that technical change is inevitable and impossible to predict in detail. The comparison of the 10 countries conveys the need for, and the difficulty of, balancing

⁽⁴⁾ See Box 1.

occupational and transversal skills, and hints at how the different national approaches can support future developments.

Cedefop concludes that progress is required in the following areas:

- further development of reference systems supporting analysis and comparison within and between countries at different levels;
- promotion of a more systematic overall use of the learning outcomes approach, through a commonly agreed structure and extensive sharing of data;
- countries' agreement on a common format for using learning outcomes in qualification descriptions;
- exploration of automated gathering of data, making it possible to scale up analysis and comparison.

Some of these requirements are discussed below.

IDENTIFYING REFERENCE POINTS

To compare learning outcomes included in national qualifications and identify their similarities and differences, countries need to be enabled to map them against a common reference point. The Cedefop study looked into various existing reference systems and tested their strengths and limitations, again on the basis of the two occupations in the 10 countries. The aim was to identify the reference system best suited to capturing the overall profile of qualifications while providing detailed insights into the different types of skills covered: occupation-specific versus transversal skills. The following systems were considered:

- **ESCO, the multilingual European classification of skills, competences, qualifications and occupations** (version 1);
- **O*Net**, the USA's Occupational information network and primary source of vocational intelligence;
- **WorldSkills standards specifications (WSSS)**, which are used as the reference point for the WorldSkills competition;
- the **VQTS model (Vocational qualification transfer system)**, competence matrices developed and applied in a series of EU-funded projects.

The comparison of the two occupations in 10 countries revealed that ESCO is currently best suited for analysing and comparing VET qualifications and can serve as a 'translation hub' for comparing qualifications and identifying their match to labour market needs. ESCO is available in 27 languages and is thus in a unique position to serve comparisons of national qualifications. Distinguishing between transversal and

occupation-specific skills, it offers a conceptual granularity allowing detailed analysis and comparison.

Nevertheless, Cedefop has concluded that, for the moment, no single reference point can serve all purposes. While approaches like ESCO and O*NET offer a good starting point, they would need some adjustments to tackle all required tasks ⁽⁵⁾. Other reference systems such as WSSS, can complement them where needed. In any case, a reference point should act as a terminological 'translation hub' only and not take on a normative function or be used as a standard. To be followed up...

NATIONAL VET QUALIFICATION SOURCES

National qualifications are increasingly described on the basis of learning outcomes; progress has been remarkable over the past decade. Varying in structure, length and detail, however, these descriptions are not always well suited to analysis and comparison.

The Cedefop study showed, for example, that for IT technicians, five of the countries where this occupation was examined (IE, ES, AT, FI, UK) considered knowledge of ICT encryption services essential; another five (BG, DK, FR, LT, NL) had not included it in their qualification descriptions. Similarly, five countries judged that IT technicians needed to be able to manage email hosting services autonomously (BG, IE, ES, AT, FI), while another five did not mention this requirement (DK, FR, LT, NL, UK).

While the lack of a common description format hinders analysis and comparison, the uneven development of national qualification databases prevents upscaling of methodologies. Hence access to, and comparability of, qualifications data are still limited owing to the use of incompatible data formats ⁽⁶⁾ and incomplete coverage.

If addressed, these weaknesses can be turned into strengths and allow for much more extensive analysis and comparison of qualifications throughout Europe. For methodologies to be upscaled, thus becoming available to a wider group of stakeholders, agreement on a common format for describing qualifications is indispensable: it would increase the overall transparency of qualifications and make it easier for learners, employees and employers to grasp fully the content

⁽⁵⁾ The main strength of ESCO lies in its very detailed approach to skills and competences, covering all relevant European labour market sectors. O*Net was developed for the US labour market. Its main strength lies in its frequent regular updates, ensuring a high degree of relevance to users.

⁽⁶⁾ The 2017 update of the EQF recommendation includes an annex (VI) on how to share data on qualifications across Europe. The continued implementation of this will directly support progress in this area.

and profile of qualifications. Such a common format could be based on features of the **Europass certificate supplement** ⁽⁷⁾ and would underpin the automated analysis and comparison of qualifications ⁽⁸⁾.

TOOLS

1. Automated qualification analysis

To be scalable in the future, the review and comparison of qualifications needs to rely on digital tools, including artificial intelligence. A digital tool supporting the automated analysis and comparison of the learning outcomes of VET qualifications would add value, but not all conditions are currently met to realise this approach. Incompatible data formats and significant differences in content structuring impede the use of automated processes. While machine learning (artificial intelligence) could help overcome some of these problems, it would require a considerable up-front investment in terms of time and resources. But, given the continued roll-out of national databases and a possible agreement on data formats and presentation templates, there is significant potential for automated analysis.

A pilot project was launched in 2020 to test an automatic linking of qualifications data to ESCO. So far, experiences from this project seem to concur with Cedefop's own tests and will eventually provide more insight into the conditions needed for automatic analysis and comparison.

2. Employer feedback

Employer reflection surveys asking employers to express their thoughts and ideas on the relevance of qualifications in the labour market are a promising route to gathering data on VET supply and helping complete the feedback loop between labour market actors and VET providers. Such surveys, if used in a targeted way, can draw a picture of how satisfied employers are with the VET graduates they have recruited and the learning outcomes they bring to the workplace. Employers are the best-placed observers and finest analysts of the link between intended and acquired learning outcomes.

The Cedefop study developed a prototype of an employer reflection survey focused on VET providers: it concerned the two occupations which were also used for testing the reference points – healthcare assistant and ICT technician – and was conducted in the

form of three different questionnaires addressed to VET schools, graduates and employers in two countries (Lithuania and the Netherlands). Respondents were invited to answer questions relating to a certain set of skills (building on the comparison of existing reference points) and assess to what extent the VET programme had actually provided graduates with these skills.

Most respondents considered the structure and level of detail of the description of the skill sets to work well. Their answers make it clear how important it is for them to have a learning-outcomes-based reference point to judge and evaluate graduates' VET skills properly.

POTENTIAL APPLICATIONS

The work in this area is part of longer-term Cedefop research into the changing content and profile of VET qualifications. Recent efforts, such as the analysis and comparison of VET curricula under the *Future of VET* project, have yielded promising first insights into the feasibility of this undertaking. To pursue this strand of work, however, the methods and approaches presented in this summary need to be further developed. The current study, laying the groundwork for analysing and comparing VET qualifications, highlights both the opportunities and the challenges.

- Analysis and comparison requires terminologically and conceptually sound reference points. While ESCO boasts a broad portfolio of occupations and a multilingual approach, it would need to be simplified or combined with other reference points for the purpose of the employer satisfaction surveys.
- The upscaling of methods for qualification analysis and comparison can be greatly enhanced through the wider introduction of qualification databases and – this is paramount – an agreement on, and the implementation of, common data formats and the development of a common template for presenting learning outcomes. These steps could be decisive in removing obstacles to a (partly) automated analysis.
- The analysis and comparison of VET qualifications depend on the quality and coverage of their description in terms of learning outcomes. Hence the future implementation of this approach requires continued, extensive dialogue and sharing of experiences. While national stakeholders decide how to balance and combine the knowledge, skills and competences included in a qualification, the way these components are described and shared has to be based on a common, agreed template, notably for length, structure and terminology. While the content of national qualifications will always differ,

⁽⁷⁾ This document complements the Europass CV, allowing for a more detailed description of the purpose and level of a person's qualification, including its learning outcomes, and providing information on the education system in which it was awarded.

⁽⁸⁾ A technical working group, mandated by the EQF Advisory Group, will be set up in September 2021 to follow up on this.

it must be possible both for learners and employers to understand what qualifications are on offer in a given EU Member State, and how they compare to qualifications in another. The quality of the learning outcomes descriptions will decide whether national authorities can learn from one another and, in this way, improve overall national qualifications.

This first exploration of methods to analyse and compare qualifications provides a stepping stone for future research in a number of areas, notably on supporting transparency and recognition of qualifications. It will also play a potentially important role in the preparation of European vocational core profiles ⁽⁹⁾, as confirmed in 2020 in the recommendation on VET and in the joint Osnabrück declaration.

⁽⁹⁾ Announced in the 2020 European Skills Agenda, page 10, footnote 33.