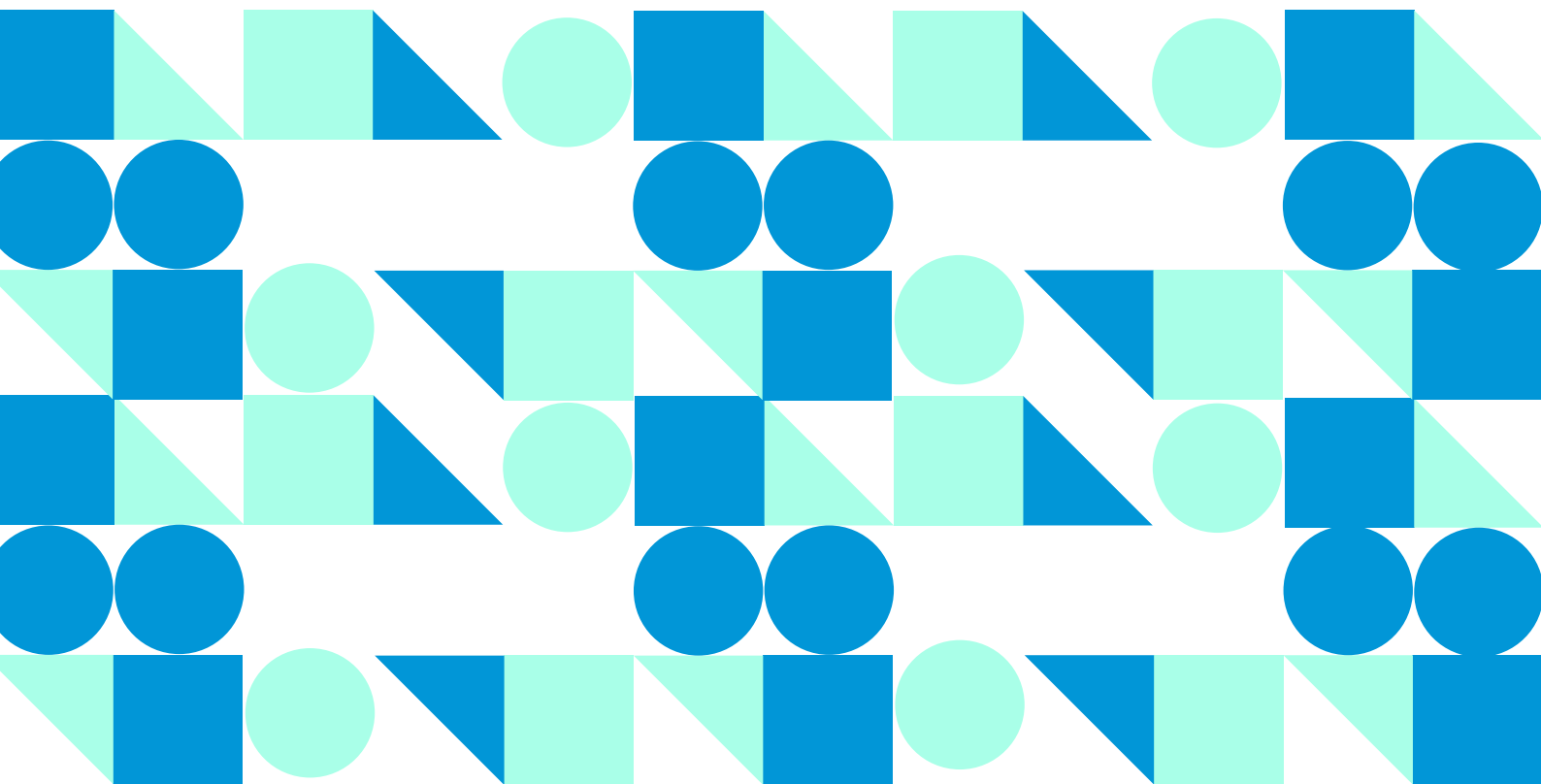




Research paper

Review and renewal of qualifications

Towards methodologies for analysing and
comparing learning outcomes





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The **European Centre for the Development of Vocational Training** (Cedefop) is the European Union's reference centre for vocational education and training, skills and qualifications. We provide information, research, analyses and evidence on vocational education and training, skills and qualifications for policy-making in the EU Member States.

Cedefop was originally established in 1975 by Council Regulation (EEC) No 337/75. This decision was repealed in 2019 by Regulation (EU) 2019/128 establishing Cedefop as a Union Agency with a renewed mandate.

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Foreword

This research paper forms part of Cedefop's *Comparing VET qualifications* project and contributes to the development of methodologies for the analysis and comparison of the content and profile of vocational education and training programmes and qualifications.

While much effort traditionally has been put into the analysis and comparison of VET institutions and structures, systematic studies on how VET qualifications differ in terms of knowledge, skills and competence are less developed. The *Comparing VET qualifications* project ⁽¹⁾ addresses this imbalance and seeks to establish a methodological basis on which future work in this area can build.

A wide range of stakeholders, including policy-makers, education and training practitioners and researchers, can benefit from robust and scalable methodologies, allowing them review and renew more systematically the content of their programmes and qualifications. And, as illustrated by the current research paper, comparative methodologies are relevant for a wide range of stakeholders operating at different levels, at local and regional, as well as at national and international levels.

The project starts from the increasing use of learning outcomes in countries across Europe and the world (Cedefop, 2009; 2017; 2020). The use of learning outcomes for defining and describing qualifications allows for systematic analysis and comparison of what countries expect their VET candidates to know, be able to do and understand. The current research paper elaborates on how this analysis and comparison of learning outcomes can support the review and renewal of qualifications by improving the dialogue (feedback loop) between VET providers and the labour market. By exploring how systematically to gather, analyse, compare and share information on the demand for, and supply of, skills and competences, at international as well as national level, the paper contributes directly to the long-term development of robust and scalable methods in this area.

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Executive Director

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⁽¹⁾ Between 2015 and 2017, Cedefop carried out [a pilot study comparing 10 VET qualifications in 10 European countries](#). The purpose of this study was to gain insight into the similarities and differences between countries regarding the content and profile of their qualifications. The methodology developed for this study was further tested in cooperation with the ETF and UNESCO, where four of the original 10 qualifications were compared in 26 countries worldwide. The lessons from this pilot led to the launching of the *Comparing VET qualifications* project.

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Executive summary

Aim of the study

The feedback between vocational education and training (VET) and the labour market can provide important input for the review and renewal of qualifications. A feedback loop that is based on learning outcomes helps provide deeper insights into what is required on the labour market, what is offered in training provisions and assessed at the end of a learning programme. It can also provide insights into how the learning outcomes achieved by qualification holders are perceived in the labour market and, in particular, by their employers. This type of feedback can help to better shape the specific profile of qualifications and so provide important information for qualifications authorities and for providers offering these qualifications. The use of learning outcomes is crucial in this approach: it not only allows to identify (new) skill needs in the labour market, but also to reflect on the learning outcomes acquired with a specific qualification as they are realised in the workplace. The feedback loop on learning outcomes suggests continuous dialogue on intended and achieved learning outcomes, trying to improve the stated expectations (intended learning outcomes) on the basis of actually achieved outcomes as applied and perceived in the labour market. In this context, the crucial question is what data are available to complete the feedback loop or how such data can be collected.

The aim of this study is to contribute to strengthening the quality and relevance of qualifications and completing the feedback loop between education and the labour market. It examines methods of collecting data on the match/mismatch between qualifications and labour market requirements, including analysis of how achieved learning outcomes are applied and perceived in the labour market (for example methods of collecting the experience of employers with holders of these qualifications). This report addresses the following two questions:

- (a) which data already exist in the countries, providing insight into the relevance of qualifications to employees, employers and other labour market stakeholders?
- (b) how can survey methodology be designed to systematically capture the experiences and appreciations of employers as regards the content and profile of qualifications? To what extent, based on limited testing, can scalability of the methodology be achieved?

This summary is structured in line with these questions and completed by conclusions and recommendations.

Exploration of methods for completing a feedback loop

Countries have different mechanisms for reflecting on the match between the supply of VET programmes and qualifications and labour market demand. A first mechanism, often informal, is that VET providers have direct contact with employers, for instance related to work placements, internship or apprenticeships. Quality assurance mechanisms may also include references to tracking graduates and employer satisfaction. This allows VET providers and employers to discuss whether the content of the qualifications and the delivery of the programme are in line with labour market needs. Second, the supply-demand matching mechanism can be integrated into the VET governance structure. Labour market stakeholders are (partly) responsible for the VET system and therefore systematically reflect on the content of VET programmes. This can be institutionalised, for example in sector skills councils or trade committees. Third, specific research approaches can be applied to gather information on the relevance of VET qualifications and the content of VET programmes. The following distinction can be made for data sources and approaches, particularly those offered at European level:

- (a) skill mismatch analyses, especially Cedefop's European skills and jobs survey that asked adult employees how their skills and qualifications match the needs of their jobs;
- (b) vacancy analyses, especially Cedefop's big-data analysis of job vacancies that provides insights into the competences desired on the labour market;
- (c) forecasting approaches that are used for reviewing and updating qualifications, particularly Cedefop's skills forecast;
- (d) VET graduate tracking measures that provide quantitative and/or qualitative information about the labour market outcomes (destination, employment status, occupation and/or satisfaction levels of both VET learners and employers) for graduates of certain programmes. These findings can be linked to more specific (types of) learning outcomes associated with certain qualifications. Information obtained in such surveys is used to renew qualifications and programmes and to provide advice to new students on what career changes VET programmes offer;
- (e) employer reflection surveys that can clarify the more specific demands for learning outcomes of qualifications. These measures and surveys allow mapping variation in demands across sectors, regions, or Member States.

Most approaches explored provide important data for creating skills intelligence but are not sufficient for completing the feedback loop based on learning outcomes:

- (a) skill mismatch analyses and the European skills and jobs survey provide information on the degree of match between skills supply and demand, but usually at a higher aggregated level and not referring to individual qualifications;
- (b) online vacancy advertisements, including Cedefop's skills online vacancy analysis tool for Europe (skills-OVATE), can be a valuable source to see what kind of skills and competences are in demand in a particular occupation. However, this does not indicate whether or not these skills are provided in the education programmes that prepare for this occupation. It can also be questioned whether it is at all possible to link vacancy data to specific qualifications and whether this can provide relevant information on graduates' skills presence;
- (c) forecasting procedures at national level and Cedefop's pan-European skills forecast provide insights into general future trends and do not typically relate to the perception of the learning outcomes achieved and realised by graduates. Further, the European skills forecast does not refer to individual qualifications but uses broad categories;
- (d) VET graduate tracking surveys are a valuable source for tracking the further development of graduates after completing their VET programme, and so can provide an indication of whether the qualification is in demand on the labour market, and sometimes even which skills and competences have contributed to their career development. However, many of these surveys and studies focus on general issues, such as whether graduates find a job easily or whether they were satisfied with the training received. The extent to which these surveys and analyses are able to capture the demand for specific learning outcomes and the orientation and profile of qualifications in detail is not yet fully explored. Graduate surveys are usually not able to capture a perspective on whether the intended learning outcomes are actually achieved.

One approach that is not systematically implemented in European Member States, but might have the potential to provide the reflection on individual learning outcomes, is the employer reflection survey that takes into account the content of qualifications. These surveys are aimed at employers, to measure their satisfaction with VET graduates working in their company in terms of the skills and competences they have acquired and the use of these skills in the workplace. Only a few of the 10 countries surveyed have employer reflection surveys that look at the content of qualifications. In some countries this was due to the absence of any surveys addressed to employers, while in cases where employers were addressed, the type of survey generally tended to focus on identifying skill needs rather than on gaining insights into their satisfaction with learning outcomes.

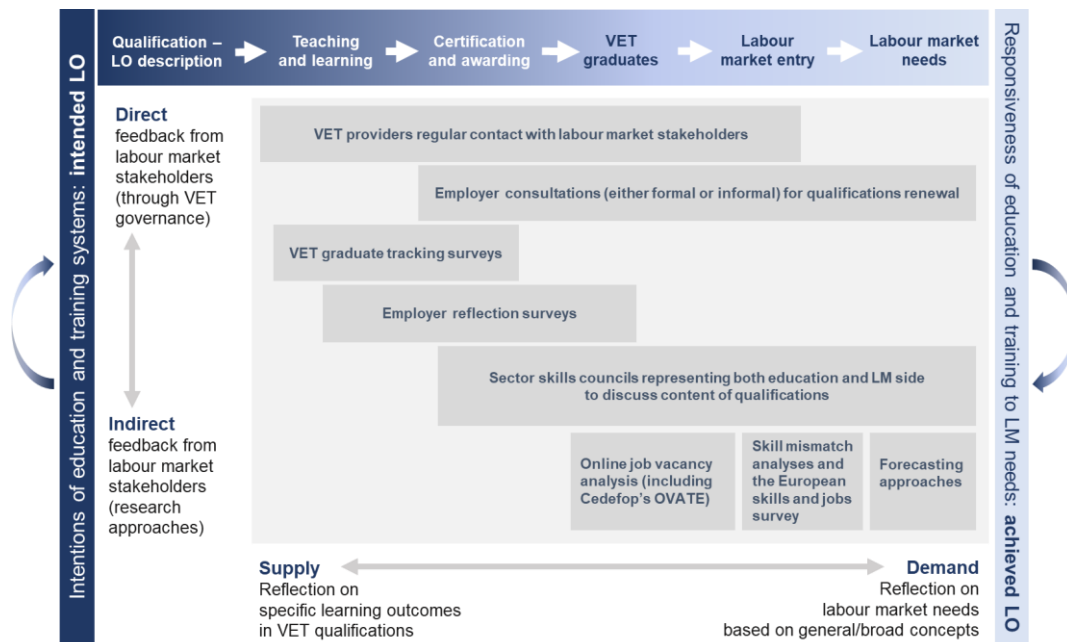
Challenges related to employer reflection survey concerns and the content of qualifications are too heterogeneous to be assessed in a generic employer reflection survey (ERS) tool: qualifications have weak links with occupations and the labour market is not accustomed to reflect on the content of qualifications; the outcomes are compromised by high levels of subjectivity and low response rates; and ERS can be costly. Five of the national experts stated that ERS are regarded as useful in their country because of the opportunities they provide but, in some countries, the national expert questioned whether such ERS would at all be useful and desirable in their country contexts. It may be that the need to have ERS is limited in systems where there are strong governance and system links between the labour market and the VET system, where VET qualifications are governed and delivered in close cooperation with employers. It is likely that in more countries there are already (more direct) feedback loops within the system, to tailor the VET provision to the emerging economic and societal needs. The ERS might therefore be more relevant for Member States where the VET system is operating within a relative arm's length of the labour market.

An observation is that existing approaches for identifying skills match/mismatch are strongly biased towards labour market demand and often do not consider the supply side, the provision of education and training. VET graduate tracking and employer surveys can be exceptions to this.

Figure 1 presents the positioning of the approaches and tools analysed related to their focus: demand or supply side, on the one hand, and individual qualifications and learning outcomes or broader categories on the other.

It can be concluded that a more promising approach for completing the feedback loop seems to be the use of surveys which can ask whether employers are generally satisfied with graduates or whether they experience shortages, or what is the demand for specific qualifications in the labour market. Employer surveys exploring their satisfaction with their employees' learning outcomes are the most direct means of tracking the link between intended and actual or realised learning outcomes, as they ask employers whether recent graduates can actually apply the skills and competences that were promised in their qualification.

Figure 1. **Positioning the approaches and tools analysed for closing the learning outcomes feedback loop**

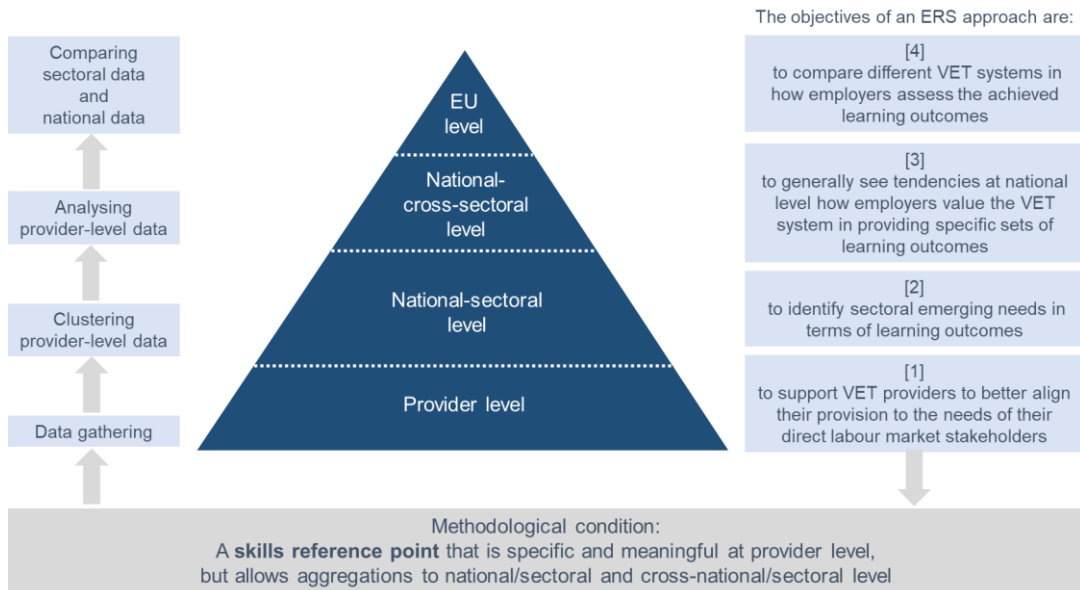


Source: Cedefop.

Survey methodology to capture employer reflections on achieved learning outcomes

The objective of the employer reflection survey approach is to support VET providers to match their offers better to the needs of their direct labour market stakeholders. It offers VET providers a possibility to engage better with their beneficiaries (both graduates and employers) and reflect together with them on the outcomes of the VET programme offered, also reflecting on the regional labour market they mostly serve. Hence, the ERS prototype is not an accountability tool but rather a tool to initiate dialogue between VET providers and employers (and graduates). However, the data collections should allow aggregation of the data to sectoral, national and cross-national levels. The main opportunities and objectives of an ERS approach are schematically presented in Figure 2.

Figure 2. Opportunities and objectives of an ERS approach



Source: Cedefop.

The workflow of the ERS in the pre-test in Lithuania and the Netherlands was as follows:

- (a) step 1: the VET provider was selected to test the ERS prototype. The approach and content of the questionnaires was discussed with representatives of the VET provider who provided a characterisation of the VET qualification in terms of a learning outcomes profile in relation to the reference point for the it (questionnaire for VET provider);
- (b) step 2: the VET provider sent the link to the questionnaire (questionnaire for graduates) to the graduates. In the invitation email, the researchers were also introduced. The researchers also asked the VET providers to send out reminders. Although the VET provider was responsible for inviting the graduates, the individual data gathered were not available to the provider;
- (c) step 3: the VET provider compiled a list of employers that potentially hired graduates from the programme and sent the invitation link to participate in the survey to the employers (questionnaire for employers). This survey also included questions on whether the employer consented to being contacted by the researchers to discuss the aggregated results;
- (d) step 4: the researchers analysed the survey results and discussed the outcomes with the VET providers and employers to start a dialogue on intended and realised learning outcomes and the content of the VET qualification.

The relevant ERS approach has three questionnaires: one for the VET providers, one for the graduates and one for the employers. In these questionnaires, when focusing on questions related to learning outcomes, it was agreed to use a skills typology that is broad enough so that it can be used regardless of the sector, occupation or qualification in question but still allows for respondents to score several specific items for each category included.

The final list of learning outcomes used in the pre-test is presented in Box 1.

Box 1. Final skills reference point

A. General occupation-related skills and competences as exercised in the workplace

This cluster describes some general occupation-specific skills and competences:

- (a) applying professional knowledge to job tasks;
- (b) using technology effectively;
- (c) applying technical skills in the workplace;
- (d) maintaining professional standards;
- (e) observing ethical standards;
- (f) using research skills to gather evidence.

B. Specific occupation-related skills and competences as exercised in the workplace

For information and communications technology (ICT) service technician:

- (a) provide technical documentation;
- (b) perform ICT troubleshooting;
- (c) use repair manuals;
- (d) configure ICT system;
- (e) administer ICT system;
- (f) maintain ICT server/system;
- (g) perform backups;
- (h) repair ICT devices;
- (i) implement ICT recovery system;
- (j) manage ICT legacy implication;
- (k) use precision tools.

For healthcare (HC) assistant:

- (a) monitor basic patient signs;
- (b) communicate with nursing staff;
- (c) empathise with the healthcare user;
- (d) interact with healthcare users;
- (e) provide basic support to patients;
- (f) identify abnormalities;
- (g) support nurses;
- (h) ensure safety of healthcare users;

- (i) convey medical routine information;
- (j) manage healthcare users' data;
- (k) conduct cleaning tasks.

C. Teamwork and interpersonal skills as exercised in the workplace

This cluster describes how the graduate works in an interpersonal context:

- (a) working well in a team and working collaboratively with colleagues to complete tasks;
- (b) getting on well with others in the workplace and understanding different points of view;
- (c) ability to interact with colleagues from different or multicultural backgrounds;
- (d) ability to follow instructions;
- (e) ability to instruct and/or lead others;
- (f) ability to handle conflicts.

D. Employability and enterprise skills as exercised in the workplace

This cluster describes how the graduate works in an organisational context and in the labour market:

- (a) ability to work under pressure;
- (b) reflect work processes and procedures;
- (c) capacity to be flexible in the workplace;
- (d) ability to meet deadlines;
- (e) understanding the nature of your business or organisation;
- (f) ability to manage processes/projects;
- (g) taking responsibility for personal professional development (keep up to date);
- (h) demonstrating initiative in the workplace and show sense of initiative;
- (i) ability to solve problems;
- (j) oral communication skills;
- (k) written communication skills;
- (l) foreign language skills;
- (m) working with numbers;
- (n) persistence and endurance;
- (o) critically reflect on own role and place in society.

Source: Cedefop.

The pre-testing resulted in the following lessons learned:

- (a) the pre-test faced severe challenges in reaching out to employers and graduates. While the VET providers approached could be convinced to participate rather easily, it was more challenging than expected to have them reach out to employers and graduates. There are several reasons for this:
 - reaching out to graduates required VET providers to have a functioning alumni policy in which contact details of graduates are kept up to date

- and also assured that graduates provided consent in being approached for surveys after obtaining their VET qualification;
- the route from graduates to employers (i.e. asking graduates to provide contact details of their supervisors) proved to be a dead end in the pre-test. In the rerun of the pre-test, the approach was changed to contacting employers directly. For this purpose, the research team asked the VET provider to make an inventory of which employers could have hired graduates in the last two years. Many employers that responded to the survey invitation were excluded, as they did not recently hire graduates from the specific VET programme;
- (b) the questionnaires and the skills lists used in the pre-test seem to be appropriate. The skills lists are detailed enough to allow in-depth reflections on the content of the qualifications but are short enough (38 items) to be used in a survey without burdening the respondents with tiresome lists of skills. This points to a good balance of complexity and simplicity of the reference point used. The average time for the employers to complete the full survey was 15 minutes. The structure with the four clusters worked well and allows a maximum of comparisons between different qualification profiles, while allowing occupation-specific skills to be assessed as well. The occupation-specific list (cluster B) seemed to work better for the healthcare assistant than for the ICT technician; the skills listed for the latter were less recognised by VET providers, graduates and employers;
- (c) there is too little data to establish a lesson learned about comparing the results for different qualification profiles and the results between countries. At the time of drafting this report, sufficient data were available only for one VET qualification offered by one VET provider. Therefore, no comparison across VET providers, qualification profiles and countries could be conducted. Also, it was not possible to benchmark one qualification against others. As data collection efforts still continue, the research team hopes to obtain additional data that allow such analyses;
- (d) despite the lack of data, the ERS is an interesting and promising approach to closing the feedback loop, looking in detail at the content of qualifications. It allows more direct exchange between VET providers and the employers of graduates on whether what is envisaged in terms of learning outcomes is perceived as being present in the work environment.

Conclusions

The study reached the following conclusions:

- (a) there are valuable sources for the creation of skills intelligence, but existing methods and tools rarely relate to individual qualifications and usually do not consider actual learning outcomes as they are realised and perceived in the labour market. They often exclusively focus on the demand side and do not consider the supply of education and training sufficiently, so they are of limited use for completing the feedback loop;
- (b) employer reflection surveys have the potential for completing the feedback loop based on learning outcomes but they are usually not conducted in a systematic way at national level. The examples identified show a variety of different approaches and there are several challenges associated with their design. Their usefulness in illustrating the match between the intentions of the VET system and the demands of the labour market seems to be assessed as higher in countries with weaker governance and system links between the labour market and the VET system;
- (c) the list of skills included in the reference point, as developed and used for the pre-test of the ERS, seems appropriate insofar as it allows for reasonable skills assessments, striking a balance between occupation-specific and generic skills, while keeping the total number of skills at a manageable level to allow their application in employer and graduate surveys. In addition, the balancing act of developing a reference point – based on existing skillsets – while avoiding both oversimplification (with the risk of being potentially meaningless) and over-complexity (with the risk of not being understood by graduates and employers) seems to have been achieved;
- (d) the pre-tested ERS approach is promising but also challenging, as it requires VET providers to keep track of their graduates (alumni-policy) and of the employers of their graduates. This is a challenge, especially in sectors with many small and medium-sized enterprises (SMEs);
- (e) the tested ERS approach is potentially scalable in terms of using the questionnaire for other qualification profiles, engaging other VET providers and offering different language versions.

Recommendations

The study findings and conclusions have led to the following recommendations:

- (a) it is recommended to integrate methods to complete the feedback loop more strongly into VET governance and quality assurance procedures and structures;
- (b) it is recommended to combine different sources for completing the feedback loop, as all sources have their specific added value and advantage;
- (c) it is recommended not just to rely on national- or system-level feedback loops to gather information for the renewal of VET qualifications, but to strengthen more direct feedback loops between VET providers and their (local or regional) labour market stakeholders so that reflections from the labour market can be taken on board in quality assurance and curriculum renewal more directly;
- (d) it is recommended to experiment further with the employer reflection survey methodology and try to set up an infrastructure inspired by self-reflection on effective learning by fostering the use of education technologies such as the 'Selfie-tool' to capture the opinions and experiences of school leaders, teachers, students and (in work-based learning settings) companies.

The following aspects need to be considered in the continued testing:

- expand to new countries. The ERS has been pre-tested in the Netherlands and Lithuania, but it would be beneficial to obtain insights into whether the approach could also work in other VET contexts;
- expand to more VET providers willing to participate and assure buy-in at national level and within economic sectors to test the approach;
- expand to other qualification profiles besides the healthcare assistant and the ICT technician. The pre-test looked at two carefully selected occupations but is very limited in covering the full scope of VET qualifications. More insights are needed into how the ERS approach works in different occupational contexts;
- combine the testing of the ERS with support to VET providers to develop policies on employer engagement and alumni policies;
- combine the ERS outcomes at national or system level with information from other sources closing the feedback loop (vacancy analysis, skills forecasts) and discuss the combined findings with VET providers and employers.

CHAPTER 1.

Background of the study, key objectives and methodological approach

1.1. **Setting the scene: relevance of qualifications and feedback loops**

Strengthening the quality and relevance of vocational education and training (VET) qualifications is essential for ensuring employability of individuals and competitiveness of labour markets, particularly when considering developments, such as the rapidly changing technological environment of VET and the associated rapidly changing skill needs. This topic is at the core of European policies. For example, the European skills agenda (European Commission, 2020a) emphasises the improving skills intelligence to deliver training relevant for the labour market, and the Council recommendation on vocational education and training for sustainable competitiveness, social fairness and resilience (Council of the European Union, 2020) calls for vocational education and training that is agile in adapting to labour market changes, as well as for a regular update of qualifications. In order to enhance the quality and relevance of VET qualifications, it is necessary, on the one hand, to have a good understanding of their content and, on the other hand, to employ reliable methods and approaches for identifying the skills needed on the labour market.

Methodologies for analysing the learning outcomes included in VET qualifications and mapping them to a reference point, as developed and tested in the previous parts of the Comparing VET qualifications study, can help to understand better the content of qualifications. The comparison of VET qualifications and their learning outcomes within or across different Member States can yield relevant insights into the differences and similarities of the contents of qualifications and inspire their renewal. However, qualifications with similar content may have a different standing and relevance across different labour markets. This may be influenced by broader trends, such as technological changes that reshape labour markets, but also more specific trends within Member States, such as the historical reputations of certain qualifications. Therefore, approaches focusing on analysing the content of qualifications (in terms of learning outcomes) need to be complemented by an analysis of how the intentions of the education and training system (intended learning outcomes as included in qualifications descriptions) match the expectations and needs of employees and employers in a given context,

and to what extent they are satisfied with what they get (achieved learning outcomes as applied in the work context). This information is an important aspect for assessing and improving the relevance of qualifications for the labour market and the match with VET provision.

Processes that keep VET up to date with the labour market – the interaction between the worlds of work and of education – have more recently been called feedback mechanisms or feedback loops ⁽²⁾. Before presenting the key objectives of this study, the main research questions and the methodological approach, Sections 1.1.1 and 1.1.2 elaborate on the concept of the feedback loop between VET and the labour market and the relevance of qualifications, introducing the question of what data are needed to complete the feedback loop and how such data can be gathered.

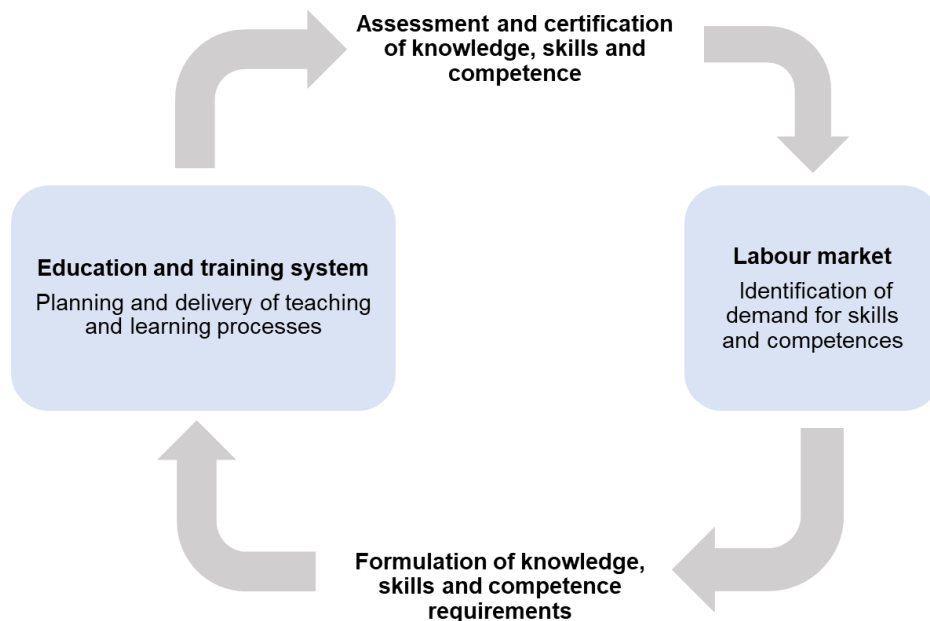
1.1.1. Feedback loop between VET and the labour market and VET governance models

The Cedefop study *Renewing VET provision* (Cedefop, 2013) explored the functioning of formal feedback mechanisms established to ensure dialogue between education and training and the labour market. Such formal feedback mechanisms are typically based on a strong (legal, institutional or political) foundation, ‘are established on a permanent basis, and comprise two or more actors (for example the state, employer and employee organisations)’ (Cedefop, 2013, p. 7). They can be defined ‘as purposefully implemented formal institutional procedures, determining the particular roles of various stakeholders in planned renewal of VET provision’ (Markowitsch and Hefler, 2018, p. 287). Compared to informal feedback processes, these formal mechanisms are considered as inbuilt governance structures. Examples of informal feedback processes include ‘local school boards, alumni networks, career fairs, cooperative projects between schools and companies, and internships. These informal processes do not necessarily result in any formal changes at national level (for example new standards or curricula) although they can be equally or even more important to keep VET relevant for the society and the labour market than formal ones’ (Markowitsch and Hefler, 2018, p. 289).

Figure 3 presents the basic model of feedback mechanism between VET and labour market established at system level.

⁽²⁾ See Cedefop, 2013; 2009; Markowitsch and Hefler, 2018.

Figure 3. **Basic model of feedback mechanism between VET and labour market**



Source: Cedefop, 2013, p. 8.

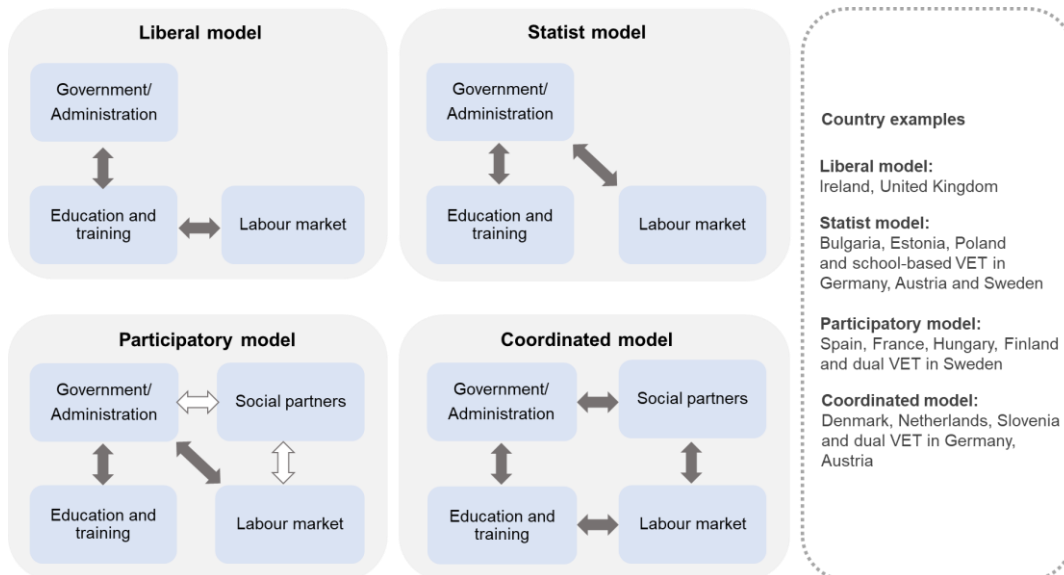
The Cedefop (2013) study particularly explored ways in which stakeholders are involved in these procedures in various areas and at different levels and can influence the review of VET provision (qualifications, curricula, teaching and learning processes). Based on the analysis of relevant procedures in 15 countries ⁽³⁾, the study identified four types of feedback mechanism at system level: 'The four types are (Cedefop, 2013, p. 9):

- (a) liberal, characterised by a low degree of coordination, where feedback between VET providers and the labour market is mainly regulated through the market;
- (b) statist, characterised by strong state regulation of education and weak links between education and the labour market in terms of formal communication;
- (c) participatory, which allows for the participation of social partners in the processes, but mainly in a consultative role;
- (d) coordinated, where social partners are the drivers of renewal processes and play an active role in its implementation'.

⁽³⁾ The study covered the following countries: Austria, Bulgaria, Denmark, Estonia, France, Finland, Germany, Hungary, Ireland, Spain, the Netherlands, Poland, Slovenia, Sweden and the UK-England.

These four types are presented in Figure 4, together with some country examples.

Figure 4. **Four types of formal feedback mechanism between VET and labour market**



NB: White arrows indicate a modest influence, while grey arrows show main interaction.

Source: Markowitsch and Hefler, 2018, p. 301 (based on Cedefop, 2013).

The way of involving the labour market stakeholders differs between the four models. This is illustrated by the following examples from the countries covered by the current study ⁽⁴⁾.

The coordinated feedback model can be observed in Denmark and in the dual VET in Austria. ‘The coordinated feedback mechanism is characterised by the decisive and far-reaching role of organised business and organised labour in the renewal processes of VET. Initiative to renew VET content typically comes from business interest organisations, with large employers as visible spokesmen in favour of a reform or from trade unions that are able to highlight specific issues and problems relating to the labour market. These demands are mediated by the social partners and expressed to the government in the form of proposals. The government then takes the formal decision on any change. The implementation of change again depends largely on the social partners who are responsible for major parts of the provision (for example apprenticeship places, training of trainers, assessment, etc.)’ (Markowitsch and Hefler, 2018, p. 297). In Denmark, systemic

⁽⁴⁾ Austria, Bulgaria, Denmark, Finland, France, Ireland, Lithuania, the Netherlands, Spain, UK-England.

feedback loops between labour market and VET are in place through the trade committees, which are directly responsible for drawing up learning outcomes for individual qualifications. In Austria, since the social partners play a decisive role in the development and governance of the Austrian (dual) apprenticeship system (as defined in the governance of the so-called Vocational Training Advisory Board), employers' knowledge of the skills of graduates is also already directly integrated into the governance structure.

The participatory model can be observed in Spain and Finland. In this model, the state is responsible for curricula and examinations, while the social partners have a formal, consultative role (Markowitsch and Hefler, 2018, p. 296). Thus, the social partners are involved in ensuring the relevance of qualifications and their learning outcomes. Finland has systematic and regular processes for anticipating skill needs, developing skills and evaluating the provision of education. These processes collect a wide range of information on vocational qualifications, their relevance and the relevance of their learning outcomes. In general, the participation of all relevant stakeholders is ensured by legislation. The so-called tripartite principle (*kolmikantaperiaate*) is the basis for the planning, implementation and evaluation of VET in Finland: in the design, planning and decision-making on VET qualifications, representatives of education, the world of work and other relevant stakeholders are involved in the various phases of the process. This principle also applies at all levels: national, regional and provider. In Spain, the update of professional training degrees is carried out at the national level and in some autonomous communities, and is based on qualitative methods of work groups, composed of sectoral experts who examine the results of learning (of a certain qualification) and propose changes in their formulation. This method depends more on the demand or pressure from sectoral lobbies than on analysis or quantitative reports on satisfaction or training needs ⁽⁵⁾.

The statist feedback mechanism, that can be identified in the Austrian school-based VET and in Bulgaria, is characterised by State funds and control. The content is usually determined by temporary working groups or commissions set up by the Ministry of Education. Social partners are involved but only have an informal role. In Bulgaria, the method that is currently used to inform VET programmes is through the expert commissions at the National Agency for VET (NAVET), which are in charge of writing and reviewing VET standards. The commissions are

⁽⁵⁾ Currently, the sectoral commissions in continuing VET (CVET) are being renewed at national level and there are some initiatives to improve the renewal mechanisms of the catalogue of training offer in CVET and also in some autonomous communities, but, so far in CVET, there is no systematic method of analysis of satisfaction of competences by companies.

divided into professional areas ⁽⁶⁾ and are tripartite bodies, including representatives of State organisations, employers' organisations and of workers' organisations. VET standards are generally developed/reviewed by working groups of three to five people (mostly including a teacher, a worker and a company director). Of note is that sectoral organisations, national employer and employee organisations can send proposals to NAVET for the development/review of VET standards. So far, a review has been initiated on the initiative of stakeholders, due to changes in:

- (a) technology;
- (b) the structure of the labour market;
- (c) skills requirements of employers in a respective professional field, etc. ⁽⁷⁾.

In Austrian full-time upper secondary VET, the Ministry of Education is responsible for renewing framework curricula; the collection of feedback from employers and employees takes place only informally. For example, each school is obliged to have a so-called advisory board in which employers should be involved ⁽⁸⁾. Proposals for changed curricula are developed by temporary commissions (*Lehrplankommission*), consisting of VET teachers representing all relevant regional VET schools. Typically, a series of forums and conferences support the exchange process with social partners, sector experts, and individual firms. Participation of any actors within the *Lehrplankommission* beyond the *Fachabteilung* ⁽⁹⁾ and VET teachers is voluntary and any hints given remain informal. However, even in the absence of a formal role, the strong influence of Austrian social partners on curricula reform must not be underestimated. Beyond informal participation in the preparation of regulation on curricula, recognised social partners typically enjoy the right to consultation on any formal regulation prior to implementation (Markowitsch and Hefler, 2018, p. 295).

⁽⁶⁾ A list of the expert commissions is available in Bulgarian:

<http://www.navet.government.bg/bg/nachalo/struktura-na-napoo/ekspertni-komisii/>

⁽⁷⁾ In its launch of apprenticeships, Bulgaria is working on a broader involvement of labour market stakeholders (the methodological framework is not published, but was made available through the project manager of the *Domino* project. See: <http://dominoproject.bg/en/>).

⁽⁸⁾ Although VET schools and colleges have to follow the centralised framework curricula, the Ministry of Education has the legal obligation to authorise individual schools to issue curriculum regulations within a specified framework in accordance with local requirements. However, the autonomy of the individual locations is limited and deviations from the prescribed framework curriculum must be justifiable with regard to the educational mandate of the individual schools, the transfer possibilities to other schools and entitlements.

⁽⁹⁾ Specialised administrative units (*Fachabteilungen*) within the Ministry of Education are responsible for particular occupational fields and its VET colleges and schools.

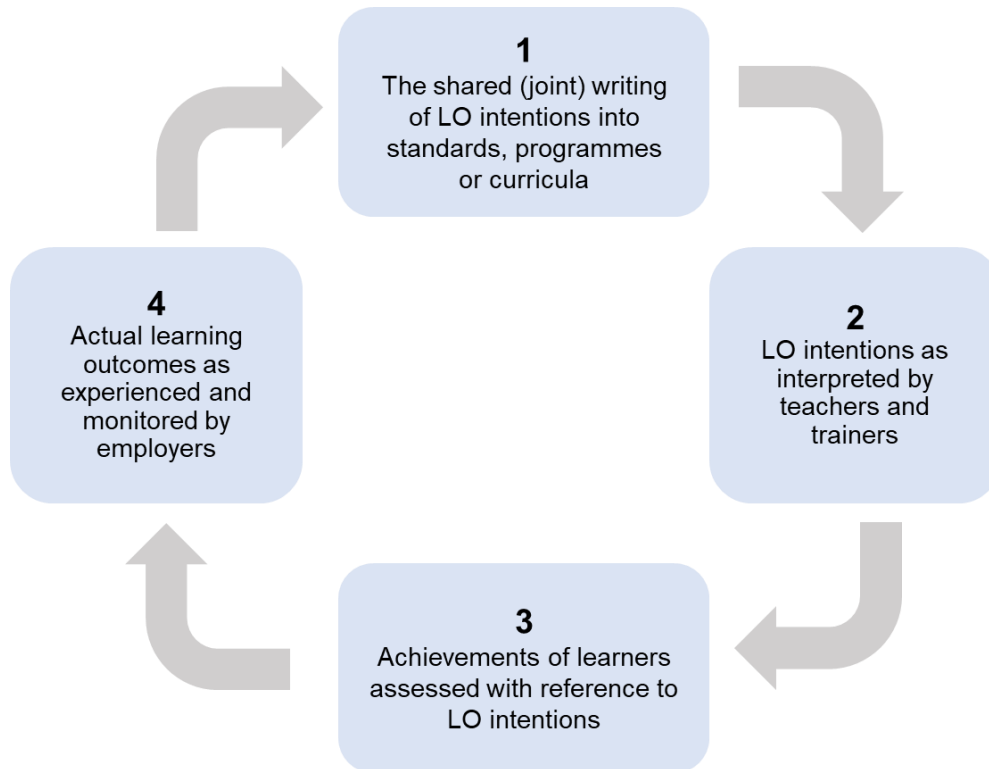
The liberal type feedback mechanism can be found in the UK-England VET system, being characterised as ‘an ideal type education market of (individual) sellers and buyers’ (Markowitsch and Hefler, 2018, p. 290). In England, further education providers align their programmes to established professional norms, and the perceived needs of students and employers. In this system, characterised by an absence of State regulation, the sector skills councils (SSCs), introduced in 2003, are the latest attempt to add a ‘formal feedback mechanism’ to the market-focused approach (Markowitsch and Hefler, 2018, p. 292).

In general, such feedback loops (as described in the four types) can lead to changes in the content of qualifications, since needs identified on the labour market can be integrated into qualifications in renewal processes. In principle, it is also possible to use these feedback mechanisms to map the extent to which skills required on the labour market are or are not included in the qualifications. However, the model presented in Section 1.1.1 is a basic one that can also be contested as too simplistic. For example, in addition to such feedback mechanisms at system level, there are various other approaches at different levels, such as regional, sectoral and provider or qualification. This basic model focuses on the intentions of qualifications and does not explicitly address the perception of these qualifications on the labour market.

1.1.2. Learning outcomes, continuous dialogue and necessary data to complete the feedback loop

A feedback loop that is based on learning outcomes helps to get deeper insights into what is required on the labour market, what is offered in training provisions and assessed at the end of a learning programme. It can also provide insights into how the learning outcomes achieved by qualification holders are perceived in the labour market and, specifically, by their employers. This type of feedback can help to shape the specific profile of qualifications better and therefore provide important information for qualifications authorities and for providers offering these qualifications. The use of learning outcomes is crucial in this approach as it not only allows to identify (new) skill needs in the labour market, but also to reflect on the learning outcomes acquired with a specific qualification as they are realised in the workplace. Since the latter aspect is not addressed explicitly in the basic model presented in Section 1.1.1, this approach can be understood as completing the feedback loop. Figure 5 illustrates the feedback loop based on learning outcomes which can serve as a key reference point in the dialogue between the worlds of work and of education.

Figure 5. **Learning outcomes feedback loop**



Source: Auzinger et al., 2017, p. 34 (based on technical specifications).

The feedback loop on learning outcomes refers to continuous dialogue on intended and achieved learning outcomes, trying to improve the stated expectations (intended learning outcomes) on the basis of actually achieved outcomes as applied and perceived in the labour market. The intended learning outcomes are written (possibly jointly) at stage 1 and used to inform the teaching, learning and assessment process carried out during the programme (stage 2). Assessment can be conducted in various ways (as part of the recognition of prior learning, as formative assessment supporting the learning process or as summative assessment resulting in the award of a unit or part of a qualification), with diverse methods and at different locations involving different types of stakeholder. A central aspect is how the assessment requirements are communicated to the learner, how learning outcomes are used in this dialogue, and how assessment outcomes are used to reflect on the learning outcomes included in the qualifications. In stage 3, the learner's achievements at the end of the learning process are recorded and assessed on the basis of the learning outcomes described in stage 1 and ideally lead to certification and the award of a qualification. Here, an important element is how the outcomes of the assessment and the achieved learning outcomes are made visible and how this is signalled to the labour market and communicated to future employers (for example, are

descriptions of the learning outcomes of the qualifications available to the labour market stakeholders?). In stage 4, the graduates put their achieved learning outcomes into practice. Ideally, the relevance and quality of achieved knowledge, skills and competence is monitored and stage 4 provides renewed information for writing of learning outcomes, when the experience of employers and also of the holder of the qualification is taken into account when qualifications are reviewed and renewed.

A previous study for Cedefop (Auzinger et al., 2017) explored the feedback loops related to developing and renewing qualifications in selected countries (the same 10 countries as covered by the current project). This study particularly looked into the role of learning outcomes and the dialogue with the labour market in the development, review and renewal of qualifications. It concluded that labour market stakeholders generally play an important role in the reviewing/renewal of learning outcomes. This active involvement in most countries goes beyond providing feedback and involves directly formulating learning outcomes (for example in working groups, expert groups or committees). In many initial VET (IVET) context studies, a strong emphasis was also placed on continuous dialogue between the worlds of education and work during the whole lifecycle of a qualification and via various channels (informal as well as formal ones) ⁽¹⁰⁾.

The previous study also revealed that in none of the IVET contexts analysed was feedback on the achieved learning outcomes of graduates and how they are experienced by graduates and employers systematically collected. The study found that procedures and mechanisms involved in undertaking reviews were more frequently based on direct stakeholder involvement and (informal) discussions and using learning outcomes, rather than gathering systematic data on experiences of graduates and employers. The feedback loops were, therefore, considered as only partly completed in the IVET contexts analysed, because the fourth stage (taking into account actual or achieved learning outcomes as experienced and monitored by employers) seemed to be underdeveloped in most.

The crucial question is what data are available to complete the feedback loop or how such data can be collected. There is a wide variety of tools and methods to capture the appreciation of qualifications in the labour market; these approaches are part of the processes for creating skills intelligence ⁽¹¹⁾. There are, for example,

⁽¹⁰⁾ In Annex 1, Figure 17 provides a schematic overview of the feedback loops related to developing and renewing qualifications during the whole life cycle of a qualification.

⁽¹¹⁾ 'Skills intelligence is the outcome of an expert-driven process of identifying, analysing, synthesising and presenting quantitative and/or qualitative skills and labour market information. These may be drawn from multiple sources and adjusted to the needs of different users' (Cedefop, 2019a, p. 1).

national school leaver surveys and graduate tracer studies, as well as employer surveys and job-vacancy analyses. The surveys and analyses can be conducted at different levels (national, regional, sectoral, or provider) and by different stakeholders. Further, such surveys and analyses can be conducted for different purposes, such as gathering information to renew qualifications, to improve the quality of VET delivery, to understand skill needs on the labour market. Organisations responsible can be those that draft learning outcomes of qualifications, sectoral bodies and employers, public employment services, and VET providers. An important aspect, however, is to explore to what extent these approaches also focus on individual qualifications and the learning outcomes included.

1.2. Key objectives and main research questions

The aim of this study is to contribute to strengthening the quality and relevance of qualifications and completing the feedback loop between education and the labour market. It examines methods of collecting data on the match/mismatch between qualifications and labour market requirements, including analysis of how achieved learning outcomes are applied and perceived in the labour market (through, for example, methods of collecting the experience of employers with holders of these qualifications).

This report addresses the questions and issues presented in Box 2.

Given the feedback loops and mechanisms in place to inform renewal processes for the content (learning outcomes) of qualifications, the crucial question is what data are available to complete the feedback loop or how can such data be collected. Taking this question as starting point, the research questions 1.1-1.3 follow logically in the sense that they aim at finding out what approaches, sources and data are used to understand better the relevance of the learning outcomes included in the qualifications and achieved by holders of VET qualifications. As is explained in Chapter 2, the study looked at skills mismatch analyses, vacancy analyses, forecasting approaches, VET graduate surveys, and employer reflection surveys. The research question 2 (2.1-2.4) continues to explore the employer reflection surveys for two reasons. First, this is a less-travelled road to capture appreciation of achieved learning outcomes of qualifications; second, it might provide a more direct closure of the learning outcomes feedback loop compared to the other – more indirect – approaches. Research question 3, as a follow-up, concerns testing a survey approach with employers and graduates and learning from this experience in terms of scalability.

Box 2. Key research questions work assignment 3 (WA3)

1. Which data already exist in the countries providing insight into the relevance of qualifications to employees, employers and other labour market stakeholders?
 - 1.1 To what extent can (existing) VET-graduate surveys illustrate the match between the intentions of the VET system and the demands of the labour market?
 - 1.2 To what extent can (existing) employer surveys illustrate the match between the intentions of the VET system and the demands of the labour market?
 - 1.3 Which data sources, beyond VET-graduate and employer surveys, can illustrate the match between the intentions of the VET system and the demands of the labour market?

2. How can survey methodology be designed to capture systematically the experiences and appreciations of employers of the content and profile of qualifications?
 - 2.1. Which could be the key target groups for a survey?
 - 2.2. How could the methodology balance depth of questions and numerical coverage?
 - 2.3 How can survey methodology support international comparison?
 - 2.4 How can survey methodology achieve understanding of short-term labour market outcomes of qualifications (getting a job that matches candidate skills) and long-term outcomes (career progress, wage gains, ability to develop skills further)?

3. To what extent, based on limited testing, can scalability of the methodology be achieved?

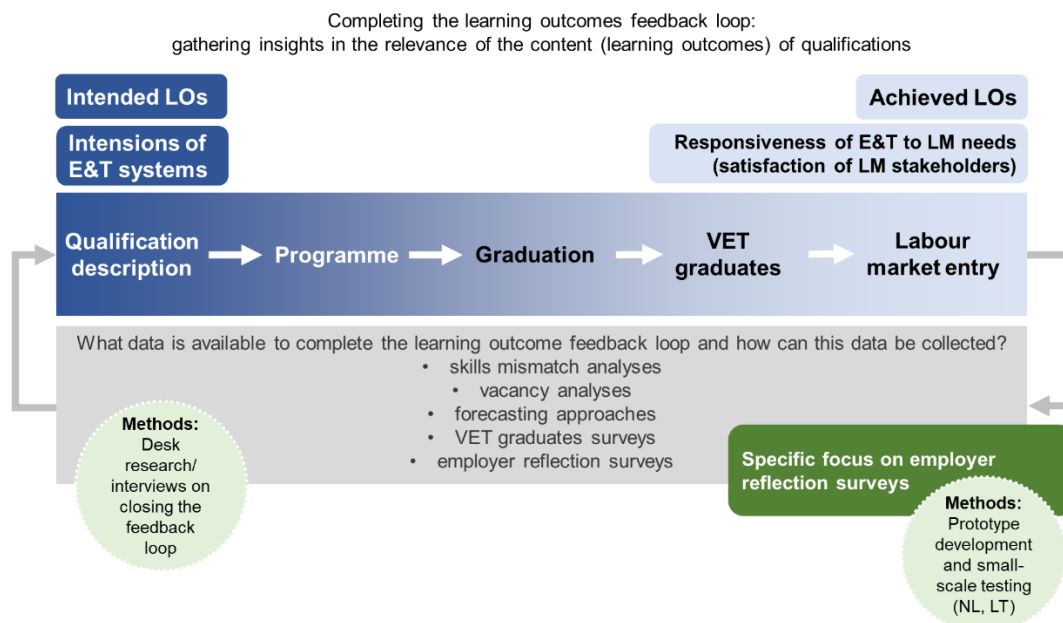
Source: Tender specifications.

1.3. Methodological approach and overview

1.3.1. Methodological approach

The focus of the report is on exploring which methodologies and data exist for assessing whether the content and profile of qualifications, as provided by the VET sector, are appreciated on the labour market, and whether graduates have achieved learning outcomes the labour market asks for. Hence, this research study consists of the following building blocks and methodological steps (Figure 6), which is discussed in more detail in the remainder of Chapter 1.

Figure 6. **Analytical framework and methodological steps**



Source: Cedefop.

Following this analytical framework, research activities were conducted at EU level (desk research, interviews with key experts/stakeholders), as well as at country level, in 10 countries (Austria, Bulgaria, Denmark, Finland, France, Ireland, Lithuania, Netherlands, Spain, UK-England). Based on the information gathered, the research team developed a prototype for testing an employer reflection survey (ERS) in two countries (Lithuania, Netherlands) for two selected qualification profiles. It was agreed to use the same two profiles for testing as in the first part of the overall study:

- healthcare (HC) assistant;
- information and communications technology (ICT) service technician.

The research activities and methodological steps are further discussed in Sections 1.3.1.1 to 1.3.1.4.

1.3.1.1. *Desk research on existing tools, methods and data sources*

Desk research was carried out centrally and at country level.

The central desk research focused on what is already known about sources, existing tools and approaches (including employer surveys) for analysing the relevance of skills and competences in the labour market. Within a number of projects and studies (such as managed by Cedefop or the European Commission), a lot of work has already been done on mapping existing practices for gathering skills intelligence: examples include VET graduate tracking measures, skills mismatch analyses, real-time labour market information and employer reflection

surveys. The outcomes of these projects and studies were taken into account to discuss what is already known, what data are already available and to what extent such data can contribute to completing the feedback loop.

At country level, the desk research focused on identifying specific types of employer reflection and satisfaction surveys, as well as on understanding why they might not be available in a country and discussing other sources used for ensuring the relevance of qualifications and their learning outcomes. Within the scope of this study, the term employer reflection surveys refers to surveys that aim to provide insight into employers' reflections on the skills and competences of VET graduates (after having obtained the qualification). These surveys are aimed at employers, seeking their reflections on the VET graduates working in their company in terms of the skills and competences they have acquired and the use of these skills in the workplace. Such surveys ask about the intended and/or achieved learning outcomes of qualifications, or which skills/competences are most (and least) relevant to the jobs of graduates, as well as the extent to which the qualification has adequately prepared graduates for their current jobs. This excludes the more general surveys, such as those aimed at simply giving feedback on how well graduates from a particular institution or programme are received (in terms of how good they are at doing the job) – without specifying the required and desired skill sets, or aspects, related to identifying skills mismatches.

The term employer satisfaction survey was originally used but this tends to see the employer as the one at the receiving end of what the VET system offers, rather than as a partner for the joint review and renewal of VET qualifications. Therefore, the term employer reflection survey was chosen to emphasise the active role of employers in this process.

The main focus was on surveys of employers with regard to graduates of IVET; however, where there were employer reflection surveys focusing on continuing VET (CVET) graduates, or graduates of higher VET programmes (for example offered by universities of applied sciences), these were also considered. In each country, existing practices were discussed in connection with the two selected profiles (if available). The information collected was recorded in templates; a general one, focusing on the national level, as well as one for each ERS selected for the inventory, indicating key aspects of the survey (such as levels of implementation, method, coverage). Table 1 presents the main structure of the template for collecting information in the 10 countries.

Table 1. **Template for desk research at country level**

Item	Further details
Part 1 Identification of employer reflection surveys	Please provide a description of how the information used for part 2 (i.e. examples that fit the criteria as explained above) was obtained. If no fitting examples were identified, which other examples were identified that did not meet the criteria?
Part 2 Examples of employment reflection surveys	A. Name of survey B. Design and methods (including questions concerning organisations responsible, main objective, targeted population, general approach, etc.) C. Content of the questionnaire (including questions concerning unit of analysis, skills classifications used, contextual factors included in the questionnaire)
Part 3 Reflection on design features	Including questions concerning the usefulness of employer reflection surveys, most suitable methodological approach, preferred level of detail of data, own reflections into which design features would be most suitable for systematic mapping of the relevance of qualifications

Source: Cedefop.

1.3.1.2. *Interviews with key informants*

The overview gained via desk research was complemented by interviews with thematic experts and national VET representatives in the 10 countries. The interviews had a dual purpose:

- (a) to complement the inventory with practices not identified in the literature review;
- (b) to discuss design features for an ERS.

The interviews with national stakeholders also explored the feasibility of conducting the testing of a to-be-developed prototype. The experts presented in Box 3 played a role as key informants.

Box 3. Key informants

EU level:

- (a) experts involved in Cedefop projects on skills mismatch, skills need forecast and big-data analysis from online vacancies, European company survey, skills surveys;
- (b) experts in job vacancy analyses.

National level (in 10 countries):

- (a) national VET associations (where relevant);
- (b) national VET government representatives or authorities/organisations involved in skills analysis in the labour market;
- (c) persons responsible for an employer reflection survey (if needed to gather further information on the survey).

A total of 32 persons were consulted at national level.

Source: Cedefop.

1.3.1.3. Analysis and design of the survey methodology

Based on the desk research and the key informant interviews, a draft prototype of a survey methodology was developed, along with the workflow for its implementation. A pre-test of the developed prototype was carried out in Lithuania and the Netherlands because these countries already had some experience with ERS. Table 2 presents the qualifications that were considered for the testing of the prototype.

The ERS was based on an online questionnaire with translations into the national languages. National researchers supported the pre-test and liaised with the national stakeholders and institutions that were involved in this exercise. The steps taken, any challenges and reflections on the approach based on feedback from stakeholders involved were documented by the country researchers.

1.3.1.4. Finalisation of the prototype and further reflections

Following the pre-test phase, the core research team analysed and compared the data gathered, identified lessons learned and ways to improve the prototype. Final reflections were dedicated to issues of scalability of the method applied, the added value of comparing results across qualification profiles and countries and on potential ways forward.

Table 2. **Countries and qualification profiles**

Country	Healthcare assistant	EQF level	ICT service technician	EQF level
LT	Carer/social worker	3	Service engineer of information and communication technologies	4
NL	Healthcare provider (nursing and convalescent homes and home care)	3	ICT management assistant	3

NB: EQF stands for European qualifications framework.
Source: Cedefop.

1.3.2. Overview

The report comprises the following chapters:

- (a) Chapter 2 elaborates on methods for completing the feedback loop and discusses data sources providing insight into labour market needs and their potential role in assessing the relevance of qualifications. Skills mismatch and job-vacancy analysis, as well as forecasting approaches, are considered, and particular focus is put on graduate tracking measures;
- (b) Chapter 3 focuses on employer reflection surveys and explores their existence, as well as reasons for non-existence in the countries covered by this study. Selected surveys are analysed in detail to inform the design of the prototype to be tested;
- (c) Chapter 4 is dedicated to the development and the pre-test of the prototype of an employer reflection survey. It presents its design features and the rationale for the choices made, the workflow for the pre-test in two countries (Lithuania and the Netherlands), the results and the lessons learned;
- (d) Chapter 5 draws conclusions related to the research questions and presents policy recommendations. In particular, it discusses the added value of bringing results of different approaches (such as vacancy analyses and employer reflection surveys) together.

CHAPTER 2.

Exploration of methods for completing the feedback loop

2.1. Introduction

Chapter 2 discusses data sources providing insight into the relevance of qualifications (and their learning outcomes) to employees, employers and other labour market stakeholders, illustrating the match between the intentions of the VET system and the demands of the labour market. Emphasis is placed on methods and approaches to complete the feedback loop: to close the gap by focusing on the learning outcomes achieved as experienced in the labour market.

The following distinction can be made for data sources and approaches – particularly those offered at European level – which are discussed in more detail in the remaining part of Chapter 2:

- (a) skill mismatch analyses, particularly Cedefop's European skills and jobs survey, that asked adult employees how their skills and qualifications match the needs of their jobs;
- (b) vacancy analyses, particularly Cedefop's big-data analysis of job vacancies, that provide insights into the competences desired at the labour market;
- (c) forecasting approaches that are used for reviewing and updating qualifications, and especially Cedefop's skills forecast;
- (d) VET graduate tracking measures that provide quantitative and/or qualitative information about the labour market outcomes (destination, employment status, occupation and/or satisfaction levels of both VET learners and employers) for graduates of certain programmes. These findings can be linked to more specific (types of) learning outcomes associated with certain qualifications. Information obtained in such surveys is used to renew qualifications and programmes and to provide advice to new students on what career changes VET programmes offer ⁽¹²⁾;
- (e) employer reflection surveys that can clarify the more specific demands for learning outcomes of qualifications.

⁽¹²⁾ See, for instance, the *studiebijsluiter* in the Netherlands, providing for all VET programmes in a systematic overview information about career changes, the usual study duration, follow-up to higher education, etc.:
<https://www.s-bb.nl/onderwijs/studie-cijfers>

2.2. Skill mismatch analyses and the European skills and jobs survey

Skill mismatch refers to situations where skill supply and skill demand diverge, and to various types of skill gaps or imbalances resulting; examples include unemployment, recruitment difficulties, skills becoming outdated and people doing jobs not using their potential. European countries have implemented various policies and tools that aim at mitigating skills mismatch and ‘the social and economic costs linked to the waste of skills and human potential it entails’ (Cedefop, 2018, p. 12). Cedefop offers an information tool, the matching skills database, that showcases a collection of innovative policy instruments from EU Member States that use information on labour market trends and anticipated skill needs to inform and shape upskilling or other skills matching policies for the current and future world of work ⁽¹³⁾.

The **European skills and jobs (ESJ) survey** is the first survey on skill mismatch carried out in the EU-28 Member States and it is the first to look at skill mismatch over time. The survey asked 49 000 adult employees (aged 24 to 65) across all 28 Member States how their skills and qualifications match the needs of their jobs. A mixed methodology was applied for collecting data: ‘The data were collected using quota sampling, following extensive testing, including a pilot survey in January 2014. The fieldwork (mixed mode, online plus telephone interviewing) was conducted from March to June 2014’ (Cedefop, 2015, p. 14).

The ESJ survey examined drivers of skill development and the dynamic evolution of skill mismatch in relation to the changing complexity of the tasks and skills required in people’s jobs. It examined to what extent individuals’ qualifications and skills are matched to the changing skill demands and complexities of their jobs and to what extent employees’ skills are developed and used in their workplace. The following aspects are considered as the novel elements and the value-added of the ESJ survey (Cedefop, 2015, p. 14):

- (a) ‘the ESJ survey provides the first comparable evidence on skill mismatch across all EU-28 Member States from a longitudinal perspective;
- (b) it provides measures of qualification and skill mismatch in total for each EU Member State, but also for 11 specific cognitive and non-cognitive skills;
- (c) it collects information on VET and work-based learning (WBL) and examines their effect on skill mismatch;
- (d) it draws critical contextual information on the motives, constraints and preferences affecting the job choice of individuals;

⁽¹³⁾ <https://www.cedefop.europa.eu/en/tools/matching-skills/>

- (e) it examines the impact of job mobility (occupational, geographic) on skill mismatch;
- (f) it looks at the determinants of individuals' skill accumulation in jobs (formal/non-formal/informal training);
- (g) it allows comprehensive analysis of the evolution of skill mismatch by measuring the impact of dynamic changes in skills and job tasks within workplaces.'

The ESJ survey questionnaire was split into eight sections as presented in Table 3.

Table 3. **Overview of questionnaire structure**

	Content of section
Selection criteria	Questions on age, gender and employment status to confirm that the respondent is eligible to take part
Current job	Questions including occupation, industry, type of organisation, changes in role since starting job, contract type
Education attainment	Questions on the respondents' highest level, type and subject of education and assessment of whether it was needed to get their current job
Skills and job demands	Questions on the type, level and importance of skills respondents require to do their current job
Situation since start of current job	Questions about respondents' development of skills and the demands of their job since they started their job
Training and learning	Questions on type and reasons for training, and attitudes to learning
Situation before current job	Questions on employment status before starting current job, reasons for accepting current job, and level of skills in current job
Background information	Demographics

Source: Cedefop, 2015, p. 108.

While the ESJ survey provides valuable 'insight into the dynamics of qualification and skill mismatch in the EU, focusing on the interplay between changes in the (cognitive and noncognitive) skills of employees in their jobs, as well as the changing skill needs and complexities of their jobs' (Cedefop, 2015, p. 15), it does not refer to specific qualifications. Further, it exclusively focuses on skills demand in the labour market and does not consider the supply of skills in education and training, making the ESJ survey of limited use for closing the learning outcomes feedback loop.

2.3. Vacancy analyses and Cedefop's skills online vacancy analysis tool for Europe

The use of online job vacancy (OJV) portals has significantly increased over recent decades, so countries often use OJV analyses to collect information about current skill needs and other job requirements (Cedefop, 2019b, p. 9). For example, web-spidering programmes can systematically map these vacancies and list the desired competences ⁽¹⁴⁾.

OJV analyses can generally add more clarity to questions, such as (Cedefop, 2019b, p. 26):

- (a) 'for which occupations is demand increasing most? In which sectors or regions?
- (b) what profiles are employers seeking to recruit in these top jobs? ⁽¹⁵⁾ What new types of job are emerging? For which type of jobs and skills are employers facing recruitment difficulties?
- (c) what are employers' demands for specific skills in specific jobs? How does this differ across countries, regions or sectors? What new skills are employers demanding? In which jobs?
- (d) considering the core set of skills required in different jobs, what possible career moves are there for jobseekers? Which jobs, although different, require a similar set of skills?'

Cedefop has set up a pan-European system for gathering and analysing information from online vacancies across all EU countries: 'The classification of European skills, competences, qualification and occupations (ESCO) and complex big data analysis techniques were used to extract information on skills from the vacancies. The results are presented in the skills online vacancy analysis tool for Europe (skills-OVATE)' ⁽¹⁶⁾. Skills-OVATE offers detailed information on jobs and skills employers demand in online job vacancies. The tool presents data collected from July 2018 until September 2020 in all EU Member States and in the United Kingdom. Skills-OVATE allows navigation of data based on the following categories:

- (a) online job vacancies providers;

⁽¹⁴⁾ For example, Ockham IPS used a web-spidering tool to map the labour market and desired qualifications and competences for cyber security professionals in the Netherlands: Ockham IPS/PLATO (2014). *Arbeidsmarkt voor Cyber Security Professionals*.

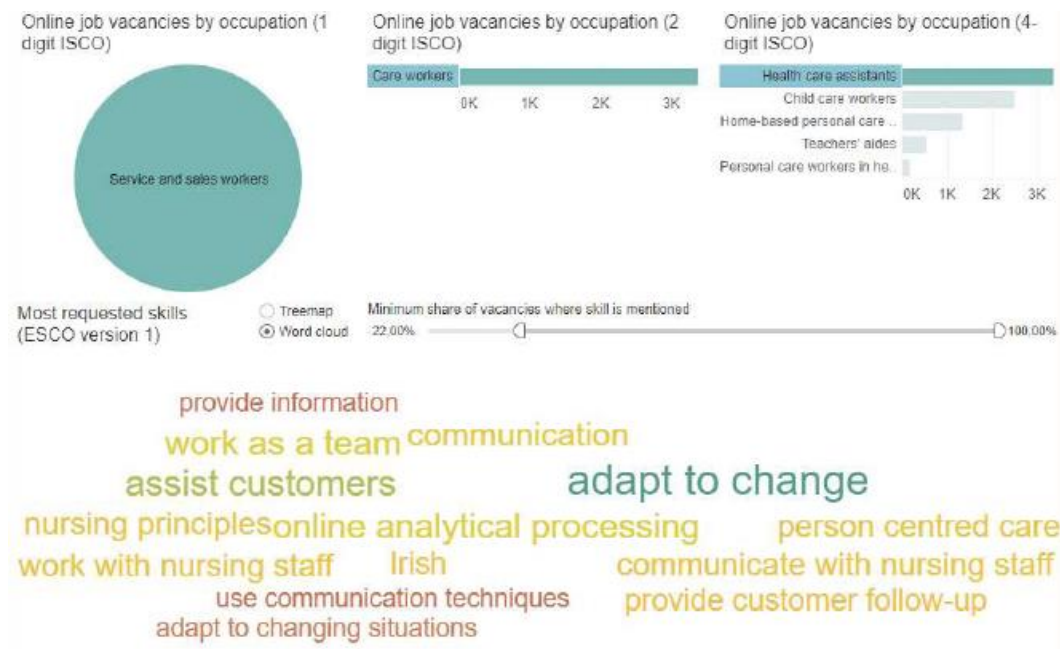
⁽¹⁵⁾ Top jobs refers in this quote to jobs most in demand.

⁽¹⁶⁾ <http://www.cedefop.europa.eu/en/events-and-projects/projects/big-data-analysis-online-vacancies>

- (b) countries and occupations;
- (c) regions and occupations;
- (d) breakdown by occupation;
- (e) skills in occupations;
- (f) most requested skills;
- (g) skill sets in occupations;
- (h) sectors and occupations.

Figure 7, for example, shows which skills are most often requested in online job vacancies for healthcare assistants in Ireland.

Figure 7. **Most requested skills in online job vacancies for healthcare assistants in Ireland**



NB: Data retrieval 6.2.2020.
Source: Skills-OVATE.

In general, such vacancy analyses provide comprehensive, detailed and timely insights into labour market trends, as well as evidence on employer skill demands. They enable new and emerging jobs and skills to be identified early. However, 'using OJVs as a data source for labour market analysis has several limitations:

- (a) vacancies in some sectors and occupations are over-represented in OJV portals;
- (b) the use of OJV portals differs across and within the countries, due to the digital divide and different employment structures;

- (c) skills listed in a vacancy notice do not reflect the full job profile: employers tend to list only critical skills and qualifications to filter job applicants;
- (d) vacancy notices have to be machine-readable and use a standardised vocabulary and, given the quantity of data, some simplifying assumptions have to be made;
- (e) the same vacancy notice may be published on several websites and not necessarily correspond to an actual job opening' (Cedefop, 2019b, pp. 9-10).

Skills-OVATE does not provide a link to specific qualifications and currently only publishes skills related to ESCO. But, since qualifications are often mentioned in job advertisements (often serving as a proxy for skills), the feasibility for analysing such data and including the information on qualifications, and possibly also European qualifications framework (EQF) levels, could be explored ⁽¹⁷⁾. However, vacancy analyses focus on the demand side only without taking the provision of education and training into account. Vacancy analyses therefore also do not provide data to complete the learning outcomes feedback loop.

2.4. Forecasting approaches and Cedefop's skills forecast

The forecasting of skills demand and supply is seen as an important measure that can signal trends and complement other labour market information in order to adapt skills policies to highly dynamic and competitive labour markets. Countries have implemented national or regional forecasting models that use different methodologies and build on various data sources.

Cedefop's pan-European [skills forecast](#) is the only source of comparable data on future employment trends across Europe. It offers quantitative projections of future trends in employment by sector of economic activity and occupational group. It explores future job openings resulting from both new jobs and a need to replace existing workers. Future trends on the level of education of the population and the labour force are also estimated. Cedefop's skills forecast uses harmonised international data and a common methodological approach with the aim of offering cross-country comparisons about employment trends in sectors, occupations and qualifications. 'The methodology uses a modular approach, with the following main elements:

- (a) the demand side (skill needs), focusing on employment (jobs);

⁽¹⁷⁾ On the Irish portal Job.ie, for example, the desired national qualifications framework (NQF) level of candidates' qualifications is indicated – see: <https://www.jobs.ie/ApplyForJob.aspx?Id=1918335>.

- (b) the supply side, focusing on available skills, the number of people economically active and the qualifications they hold;
- (c) imbalances, comparing the demand and supply side modules' (Cedefop and Eurofound, 2018, p. 13).

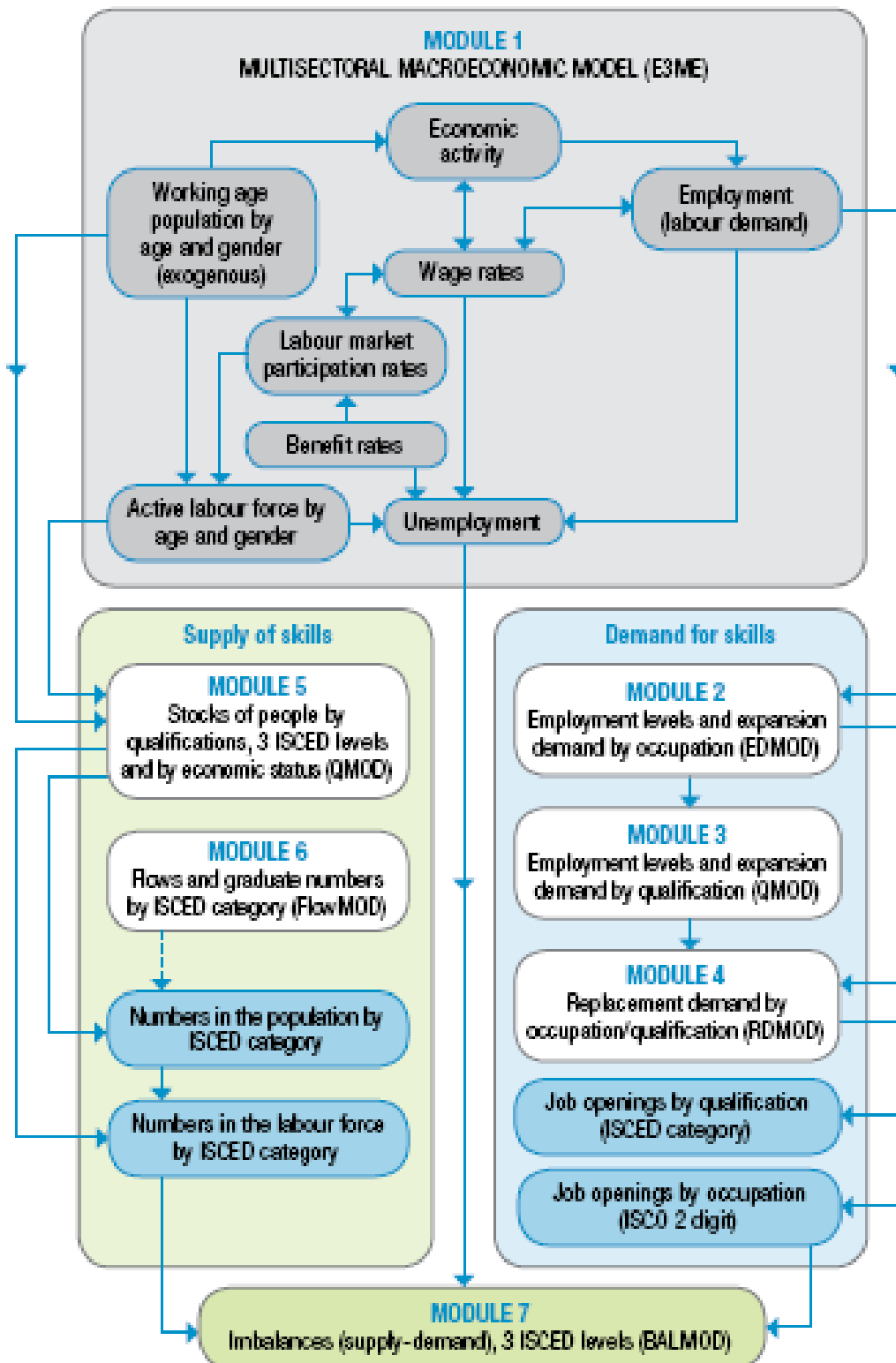
The individual modules are presented in Figure 8.

This model provides perceptions on general trends but uses rather broad categories. For example, in relation to qualifications, the following three categories are used (Cedefop, 2012, p. 135):

- (a) low level (international standard classification of education (ISCED-97: 0-2);
- (b) medium level (upper and post-secondary (ISCED-97: 3-4);
- (c) high level (ISCED-97: 5-6).

Like the other approaches presented in Chapter 2, it strongly focuses on the demand side and, while considering the supply side, it does not refer to the delivery of education and training. Thus, it is not possible to use the data for assessing the relevance of individual qualifications and their learning outcomes and for completing the feedback loop.

Figure 8. **Modelling skill supply and demand**



Source: Cedefop and Eurofound, 2018, p. 15.

2.5. VET graduate tracking measures

VET graduate tracking can be defined as the collection of quantitative micro and aggregate data and/or qualitative information about employment and social outcomes of people leaving VET. VET graduate tracking measures can provide more general information on VET graduates for certain qualifications (such as destination, employment status, salary level) and it might be possible to link these findings to more specific (types of) learning outcomes associated with certain qualifications. Information obtained in such measures can provide crucial intelligence on the quality of learning programmes and can be used to renew qualifications and programmes as well as to provide advice to prospective students (and their parents) on what career changes VET qualifications and programmes offer. The ability to track graduates is also considered a core component of effective quality assurance systems, as it provides a mechanism for gathering intelligence on skills utilisation in the labour market and placement rates. This is reflected in the European quality assurance framework for vocational education and training (EQAVET) which was established by a recommendation in 2009 ⁽¹⁸⁾. It was further emphasised in other European policies, such as the 2015 Riga conclusions *On a new set of medium-term deliverables in the field of VET for the period 2015-20* ⁽¹⁹⁾, the Commission's new skills agenda for Europe, adopted in 2016 – that also emphasised the need for tracking VET graduates to gain a better understanding of their performance ⁽²⁰⁾ – and the 2017 Council recommendation on tracking graduates, which proposed making progress by 2020 on the establishment of graduate tracking systems ⁽²¹⁾.

In line with these policies, the European Commission has supported several initiatives to increase the knowledge of VET graduate tracking policies and practices in Europe, to enhance the use and quality of graduate tracking, as well as cross-country cooperation on this:

- (a) in 2017, the Directorate-General for Employment, Social Affairs and Inclusion (DG EMPL) published the study *Mapping of VET graduate tracking measures at EU Member States* (European Commission, 2017) which mapped national,

⁽¹⁸⁾ European Parliament and Council of the European Union, 2009;
<https://www.eqavet.eu/>

⁽¹⁹⁾ Latvian Presidency of the Council of the European Union and European Commission, 2015: https://eu2015.lv/images/notikumi/VET_RigaConclusions_2015.pdf

⁽²⁰⁾ European Commission, 2016.

⁽²¹⁾ Council of the European Union, 2017.

- regional, sectoral and institutional practices in VET and discussed scenarios for cooperation at EU level ⁽²²⁾;
- (b) in 2018, the Commission established the expert group on graduate tracking (2018-20) which provides a forum for cooperation and mutual learning about graduate tracking and data analysis ⁽²³⁾;
 - (c) in 2019, the Directorate-General for Education, Youth, Sport and Culture (DG EAC) commissioned the study *Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries* (European Commission, 2020b). The study aimed to update and add to existing intelligence on graduate tracking mechanisms in higher education (HE) and VET to inform the work of the expert group on graduate tracking, ahead of the reporting required on progress towards achieving the recommendation in 2020 ⁽²⁴⁾. This study focused on national and regional measures.

The 2017 and 2019 studies on graduate tracking measures collected information on the methodologies applied (such as the use of administrative data, surveys or a combination of both) and analysed the characteristics of the measures identified. Some results are presented in the following paragraphs.

The list of indicators dealt with in both studies in the measures for tracking VET graduates shows that only rather general information can be collected using administrative data. Measures for tracking VET graduates based on administrative data alone are not sufficient to close the feedback loop. It is not a surprise that graduate tracking measures based on surveys can include more general indicators as well as more individual ones, such as satisfaction with training received or of employment acquired and relevance/utilisation of acquired skills at the workplace. In case of this last factor, the surveys analysed in the 2019 study refer to the following aspects (from the graduates' perspective):

- (a) general matching of job and education (for example, adequacy of employment in relation to education: was the training or the certificate/qualification obtained a necessary requirement for the job?);

⁽²²⁾ The study was conducted by ICF consulting services limited (Belgium), in cooperation with 3s (Austria), under the framework contract EAC/47/2014 (request for services VT/2016/058).

⁽²³⁾ <https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=3580&news=1>

⁽²⁴⁾ The study was conducted by ICF consulting services limited (Belgium), in cooperation with 3s (Austria) and CHEPS (the Netherlands), under the framework contract EAC/47/2014 (request for services EAC/23/2019).

- (b) matching of skills acquired during education and their utilisation in employment (for example, are the skills obtained useful in the current job, frequency of using the skills obtained in the current job, adequacy of skills level needed in the job and skills level obtained).

The aims of VET graduate tracking measures are of interest: particularly relevant are those measures that can be used for the review and renewal of qualifications. The results of both studies show that measures to track VET graduates are mainly used for policy development and planning and less frequently for the review and renewal of qualifications or programmes at provider level.

In order to be relevant for the completion of the feedback loop, the graduate tracking measures would have to relate to specific qualifications but this is not always the case. Around three quarters of the measures analysed in the 2017 study can be linked to specific qualifications. The 2019 study did not consider this aspect but about half of the measures contain at least a link to level, subject and provider and not just to general categories (such as ISCED level).

With measures to track VET graduates based on administrative learning and employment data, it is only possible to collect 'hard' facts. Surveys must be used to investigate the satisfaction of graduates or their employers with the learning outcomes achieved, as well as the relevance and utilisation of acquired skills at the workplace. However, such categories are not included in all cases; when they are included, they are only treated from the perspective of the graduate and not from that of the employer. On the basis of the two mapping studies, it is unclear to what extent individual learning outcomes or even types of learning outcomes have been taken into account in the measures analysed. It can be concluded that the review and renewal of qualifications and their learning outcomes are generally less often the focus of these measures. Therefore, the current tracking approaches for VET graduates in the EU Member States, despite considering the demand and supply side, are of limited relevance in terms of data collection to complete the feedback loop as understood in the context of this study.

2.6. Employer reflection surveys

Employer reflection surveys can be defined as approaches in which employers (or their representatives) are asked to provide their reflections on the relevance of qualifications in the labour market. These surveys are usually, in some form, part of renewal of qualifications processes. However, they are systematically conducted at a national level only to a limited extent. In this study, the research team identified the following examples in the 10 countries covered:

- (a) surveys that address employer perception of and demand for qualifications;
- (b) employer reflection surveys without reference to learning outcomes included in qualifications;
- (c) employer reflection surveys with reference to learning outcomes included in qualifications.

2.6.1. Surveys that address employer perception of and demand for qualifications

The examples below include those studies and surveys that are very much based on employer consultation as a source of information, but do not take the shape of an employer reflection survey.

In UK-England, several questionnaire-based surveys could be identified, that address employer perception of and demand for qualifications, usually within the context of skill demand. The Department for Education publishes a biennial skills survey, consulting employers about the abilities of the workforce and current and future workforce needs (DfE, 2017). The Office of Qualifications and Examinations Regulation (Ofqual, the independent qualifications regulator for England, responsible for regulating around 150 awarding organisations) has commissioned a survey of employer perceptions of vocational and technical qualifications (Pye Tait Consulting, 2018); the Edge Foundation (a civil society organisation concerned with vocational education) publishes a quarterly skills shortage report⁽²⁵⁾. An interesting feature of the Edge Foundation bulletin is that it includes summaries of other reports: the DfE skill survey (see above), the employer perceptions survey (see above), the quarterly British Chambers of Commerce economic survey, the CBI/Pearson education and skills survey (10 published so far) and the quarterly Open University business barometer. These are all questionnaire-based surveys and their main relevance to this project is that they address employer perception of and demand for qualifications, usually in the context of skill demand. None of them have surveys (or data on surveys) of employer satisfaction with, or perception of, particular qualifications; they do not deal with the design features of qualifications, such as whether they are outcomes-based, nor is there any detail on specific qualifications or what employers think of them. They do, however, offer plenty of data on the amount and levels of training, understanding of the vocational qualification and VET system, employers' perceptions and use of qualifications in general, and some data on skill utilisation (Edge Foundation). Of interest for this project could be the combination of methods used:

⁽²⁵⁾ For example Edge Foundation, 2019.

- (a) the DfE employer skills survey used a sample of the population of businesses with more than two employees in England, Scotland and Wales. The core sample was interviewed, and a follow up questionnaire was issued to a subsample, with a response rate of 43%;
- (b) the Ofqual-commissioned employer perceptions survey used an initial approach questionnaire, with follow-up interviews with employers, training providers and learners.

Also, the French public employment service (*Pôle emploi*) publishes a number of relevant studies in this regard. The *How do employers select the applicants they recruit?* (Chamkhi et al., 2018) study, for instance, is based on a qualitative and quantitative employer survey that mainly includes questions regarding the last batch of recruitments (expected competences in the trade job, difficulties felt when trying to recruit, criteria used in the end to decide on whom to recruit), as well as one question about the parts of the CV that were closely reviewed. This type of survey is carried out regularly by *Pôle emploi*, the most recent iteration of this survey has been issued in 2016 (Lainé, 2016). The statistical service of the Ministry of Labour (*Direction de l' Animation de la Recherche, des Études et des Statistiques*, DARES) published a similar survey in 2017 (Section 2.6.2).

The Bulgarian public employment service (PES) conducted an employer survey on local short-term labour demand in February 2018 ⁽²⁶⁾. The study is carried out twice per year and is obligatory under the Employment Promotion Act. It provides information on discrepancies between skills supply and demand in specific sectors and occupations, but it does not include questions related to the satisfaction of employers with skills and competences of VET graduates.

The Danish Ministry of Education operates grant schemes that allow trade committees to obtain funds to commission research projects, in order to back up their work and provide input for the drafting of occupational profiles. They address specific sectors or themes, and often involve employers as sources of information, but not in the style of a reflection survey ⁽²⁷⁾.

Also, in Spain, several studies have been identified that collect information on the demands and training needs of companies. Private employment agencies usually publish reports or general surveys in an unsystematic way, which gather opinions from employers on the difficulties in finding suitable professional profiles or on their competence requirements for the professional profiles. In addition, some

⁽²⁶⁾ The study is available in Bulgarian at:
<https://www.az.government.bg/pages/prouchvane-potrebnosti-rabotna-sila022018>
(Bulgarian Ministry of Labour and Social Policy, 2018).

⁽²⁷⁾ Danish Ministry of Children and Education, 2018a:
<https://www.uvm.dk/puljer-udbud-og-prisuddelinger/puljer/puljeoversigt>

foundations – such as *Funcas* (Chamber of Commerce) – have undertaken qualitative approaches to collecting business opinions, in which they include some questions about the education system and what it offers.

2.6.2. Employer reflection surveys without reference to learning outcomes in qualifications

The following examples again use employers as a source of information and ask them about their satisfaction with the VET system and (in some cases) the satisfaction with specific VET qualifications. They do not refer directly to the content of the qualifications.

In Denmark, regular ERS are carried out in order to ascertain the level of cooperation or cohesion between vocational schools and placement enterprises, and to ensure the wellbeing of learners in order to avoid students dropping out ⁽²⁸⁾. These employer reflection surveys are, however, not related to the development of qualifications in terms of learning outcomes.

In Finland ⁽²⁹⁾, VET providers, as part of their obligatory quality assurance measures required by VET legislation, have their own feedback systems and, as part of these, there are also measures which gather information on the satisfaction with VET provision and the skills and competences of the graduates. How this is then done varies from one VET provider to another, but it tends to remain at a more general level, meaning that specific employer satisfaction with the skills and competences of VET graduates does not tend to form part of these feedback inquiries.

In France, the interprofessional training centre for the food industry (CIFCA, *centre interprofessionnel de formation des commerces de l' alimentation*) has published surveys on employer satisfaction, alternating with training quality (2015-16) ⁽³⁰⁾. The survey is based on a multiple-choice questionnaire and the target group includes enterprises with up to 10 employees. The questions address issues

⁽²⁸⁾ Danish Ministry of Children and Education, 2018b:
<https://www.uvm.dk/erhvervsuddannelser/skoleudvikling/klare-maal/virksomhedstilfredshedsmaalinger>

⁽²⁹⁾ In addition, the new Vocational Training Act and the reform provide for the renewal of the financing system for VET in Finland. Within the framework of the reform, the financing of VET will be renewed to the extent that a more emphasised part of the performance-oriented and efficiency-based financing elements will be introduced. These elements also include indicators of employer satisfaction. How these indicators are to be defined, monitored and measured has not yet been defined, but the system should be in place by 2022.

⁽³⁰⁾ CIFCA, n.d.:
https://www.cifca.fr/cifca_images/audit_satisfaction_employeurs_cifca.pdf
https://www.ifopca.fr/ifopca_images/audit_satisfaction_employeurs_ifopca.pdf

such as: the recruitment process, the training itself, the satisfaction with the learner during the on-the-job practice, whether the interviewee would hire the learner, and whether s/he would recommend the CIFCA training centre. Another example from France is the survey on job advertisement and recruitment (*offre d'emploi et recruitment*, Ofer) that was carried out by the statistical service of the Ministry of Labour in 2016 and focused on enterprises that recruited at least one employee between September and November 2015 (DARES, 2017). This is the only French national survey describing all the steps of recruitment, from the formulation of the need in terms of human resources to the satisfaction of the employer in relation to the recruitment. The themes addressed, and the questions asked, take into account the evolution of the labour market (for example, development of information and communication technologies, trade-offs by employers regarding the different types of contracts).

In the Netherlands, Panteia carried out an employer satisfaction survey that focused on the distribution of graduates from all education levels, across (groups of) professions within the logistics sector. An interesting element in this survey is the inclusion of a section on the occupational context relevant to this sector, through a so-called PESTLE analysis ⁽³¹⁾.

2.6.3. Employer reflection surveys with reference to learning outcomes included in qualifications

These surveys are aimed at employers, to measure their satisfaction with VET graduates working in their company in terms of the skills and competences they have acquired and the use of these skills in the workplace. The research across the 10 Member States covered by this study reveals that such ERS are not commonly used to complete the feedback loop on learning outcomes achieved. Other approaches are more often applied to ensure the relevance of learning outcomes of qualifications. In the European countries covered by this study, we only identified six examples of surveys that have employers reflect on the achieved learning outcomes as intended by the qualification. A detailed analysis of these examples is presented and discussed in Chapter 3.

⁽³¹⁾ PESTLE or PESTEL analysis (formerly PEST analysis) refers to 'a framework or tool used to analyse and monitor the macro-environmental factors that may have a profound impact on an organisation's performance' (B2U, 2016, p. 1).
<https://www.business-to-you.com/scanning-the-environment-pestel-analysis/>

2.7. Closing the learning outcomes feedback loop: an assessment of different approaches

Countries have different mechanisms for reflecting on the match between the supply of VET programmes and qualifications and labour market demand. A first type, often informal, is that VET providers have direct contact with employers, for instance related to work placements, internship or apprenticeships. Quality assurance mechanisms may also include references to tracking graduates and employer satisfaction. This allows VET providers and employers to discuss whether the content of the qualifications and the delivery of the programme are in line with labour market needs. Second, the supply-demand matching mechanism can be integrated into the VET governance structure. Labour market stakeholders are (partly) responsible for the VET system and therefore systematically reflect on the content of VET programmes. This can be institutionalised, for example in sector skills councils or trade committees. Third, specific research approaches can be applied to gather information on the relevance of VET qualifications and the content of VET programmes. The potential contribution of these research approaches to completing the feedback loop is briefly assessed below.

VET graduate tracking surveys are a particularly valuable source for tracking the further development of graduates after completing their VET programme; they can provide an indication of whether the qualification is in demand on the labour market, and sometimes even which skills and competences have contributed to career development. However, many of these surveys and studies focus on general issues, such as whether graduates find a job easily or whether they were satisfied with the training received. The extent to which these surveys and analyses are able to capture the demand for specific learning outcomes and the orientation and profile of qualifications in detail is not yet fully explored. Moreover, graduate surveys are usually not able to capture a perspective on whether the intended learning outcomes are actually achieved.

The other approaches explored provide important data for creating skills intelligence but are not sufficient for completing the feedback loop based on learning outcomes:

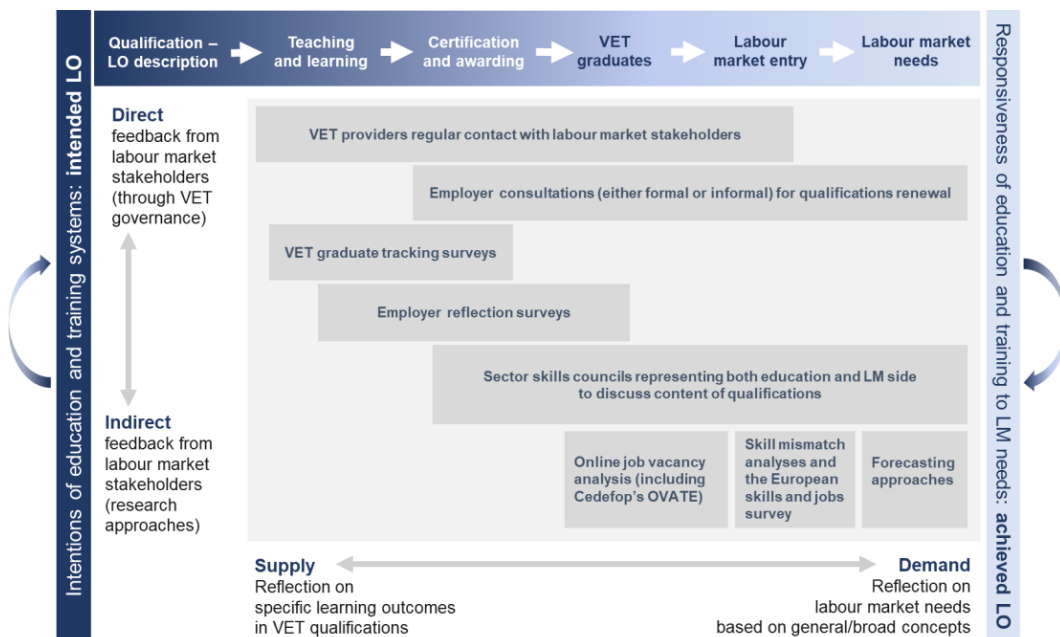
- (a) skill mismatch analyses and the European skills and jobs survey provide information on the degree of match between skills supply and demand, but usually at a higher aggregated level without reference to individual qualifications;
- (b) online vacancy advertisements, including Cedefop's skills-OVATE, can be a valuable source of information on what kind of skills and competences are in demand in a particular occupation. However, this does not indicate whether or not these skills are provided in the education programmes that prepare for

- this occupation. Moreover, it can be questioned whether it is at all possible to link vacancy data to specific qualifications and whether this can provide relevant information on graduates' skills presence;
- (c) forecasting procedures at national level and Cedefop's pan-European skills forecast provide insights into general future trends and do not typically relate to the perception of the learning outcomes achieved and realised by graduates. Further, the European skills forecast does not refer to individual qualifications but uses broad categories.

Another observation is that existing approaches to identifying skills match/mismatch are strongly biased towards the demands of the labour market and often do not consider the supply side, the provision of education and training. VET graduate tracking and employer surveys can be exceptions of this.

Figure 9 presents the positioning of the approaches and tools analysed related to their focus: demand or supply side on the one hand and individual qualifications and learning outcomes or broader categories on the other hand.

Figure 9. **Positioning the approaches and tools analysed for closing the learning outcomes feedback loop**



Source: Cedefop.

It can be concluded that a more promising approach for completing the feedback loop seems to be the use of employer surveys which can ask whether employers are generally satisfied with graduates or whether they experience shortages, or what is the demand for specific qualifications in the labour market. Employer surveys exploring their satisfaction with their employees' learning

outcomes are the most direct means of tracking the link between intended and actual or realised learning outcomes, as they ask employers whether recent graduates can actually apply the skills and competences that were 'promised' in their qualification. The use of such employer reflection surveys will be discussed in more detail in Chapter 3.

CHAPTER 3.

Employer reflection on achieved learning outcomes: surveys examined

3.1. Introduction

As indicated in Chapter 2, there are different ways to complete the feedback loop. Most existing approaches pay little attention to the content and profile of qualifications and operate at a more general level, making it difficult to use data to support the review and renewal of qualifications with a view to improving their quality and relevance. One approach that is not systematically implemented in European Member States, that might have the potential to provide the reflection on individual learning outcomes, is the employer reflection survey that takes into account the content of qualifications, as briefly introduced in Section 2.6.3. These surveys are aimed at employers, to measure their satisfaction with VET graduates working in their company, in terms of the skills and competences they have acquired and the use of these skills in the workplace. This study is particularly interested in surveys that ask questions about the intended and/or achieved learning outcomes of qualifications; or that provide information about which skills/competences are most (and least) relevant to the job of graduates and the extent to which the qualification has adequately prepared graduates for them. This excludes the more general surveys, such as those aimed at simply giving feedback on how well graduates from a particular institution or programme are received (in terms of how good they are at doing the job), without specifying the required and desired skillsets or aspects related to identifying skills mismatches. Only a few of the 10 countries surveyed have employer reflection surveys that look at the content of qualifications. In some countries this was due to the absence of any surveys addressed to employers; in cases where employers were addressed, the type of survey generally tended to focus on identifying skill needs rather than on gaining insights into their satisfaction with learning outcomes. In Chapter 3 we will further explore the sample of identified surveys, enriched by non-European approaches.

In the following we focus on the ERS which aim at identifying the match between the intentions of the VET system (intended learning outcomes) and the needs of the labour market. Reflection by employers on whether VET graduates have actually achieved the intended learning outcomes, and whether the learning outcomes achieved and put into practice actually meet the needs at work, would complete the feedback loop at the level of learning outcomes. Our focus will be on aspects of design and methodology of the (six) ERS examples identified by the

national researchers in the European countries covered by this study. In addition to the surveys identified, the research team also considered another non-European survey (from Australia), which represents an interesting and well-developed large-scale ERS approach. The six European and the one non-European ERS, which are the focus of Section 3.1, concern the following:

- (a) Australia: 2018 employer satisfaction survey (ESS). The ESS is an annual national survey involving two rounds of data collection each year (in November and May). The ESS looks at university and non-university higher education graduates. The specific targets are the supervisors of recent graduates. The ESS in Australia is a national approach, with well-developed methodology. The downside of this ESS is that it focused on higher education and that it is a non-European survey;
- (b) Austria: employer survey from the University of Applied Sciences, Carinthia, 2014 ⁽³²⁾. This is a regional survey, as part of a one-off study carried out in 2014 by the University of Applied Science ⁽³³⁾;
- (c) Ireland: Irish national employer survey (NES). This (national) survey covers graduates from higher education ⁽³⁴⁾ and further education and training (FET, the Irish equivalent of VET), and distinguishes between higher education and FET in the analysis. Drivers for the NES are the national strategies for FET and higher education, both of which stress the need for closer relationships between business and education and training ⁽³⁵⁾;
- (d) Lithuania 1, quality assurance (QA): survey on employers' satisfaction with the skills and competences of VET graduates in the framework of the project European programme of the VET quality assurance national guidance points activities No 2016-0783/001-001 ⁽³⁶⁾;

⁽³²⁾ In national language: *Arbeitgeberbefragung der Fachhochschule Kärnten 2014* (UAS Carinthia, 2014). This survey does not refer to IVET, but to higher education. Nevertheless, it has been included in this analysis as there is no employer satisfaction survey (ESS) for IVET in Austria and the regional approach applied was considered interesting for the design of the ESS prototype in this study.

⁽³³⁾ In preparation for the institutional evaluation (in 2015) by the Austrian quality assurance body for higher education (AQ Austria).

⁽³⁴⁾ Higher education in Ireland includes institutes of technology, which provide, *inter alia*, higher VET programmes.

⁽³⁵⁾ An objective of the further education and training strategy 2014-19 is to ensure that the relevant FET provision is informed directly by employers.

⁽³⁶⁾ Implemented by the Lithuanian Centre for the Development of Qualifications and Vocational Training (2018). In national language: *Darbdavių pasitenkinimo profesinio mokymo įstaigų absolventų gebėjimais tyrimas, įgyvendinant 'Europos profesinio mokymo kokybės užtikrinimo nacionalinių orientacinių punktų 2016 m. veiklos*

- (e) Lithuania 2, skills, competences and qualifications (SCQ): survey on employers' satisfaction with the skills and competences of VET graduates executed by the Lithuanian Employers Confederation (LEC) in the framework of Erasmus+ mobility projects since 2016 ⁽³⁷⁾. This survey was developed and used by the employers' organisation, following the needs and focused on the requirements of employers;
- (f) Netherlands, employer satisfaction measurement: transition of upper secondary vocational education (*middelbaar beroepsonderwijs*, MBO) to the labour market ⁽³⁸⁾. This is a survey developed by the Foundation for Cooperation on Vocational Education, Training and Labour Market (*Stichting Samenwerking Beroepsonderwijs Bedrijfsleven*, SBB) at the request of the Ministry of Education, Culture and Science (OCW), following a motion filed by Member of Parliament Straus ⁽³⁹⁾ in 2015. In this motion, she requested the inclusion of a national indicator on employer satisfaction into the government budget. The survey was conducted by an organisation that already has a registry of recognised (VET) training companies and the sample was expanded for the second iteration (including unregistered non-training companies);
- (g) Spain: employment monitor training needs in the Community of Madrid (Community of Madrid, 2016) ⁽⁴⁰⁾. This concerns a primary investigation of the market needs of workplaces through a survey of companies, representative in terms of economic activity and company size.

In most of the examples studied, the ERS is either systematically performed (Australia, Ireland, Netherlands) or was developed as a one-off study (Lithuania 1 and 2, Austria). Spain is an exception here, in that the survey was meant to be systematically performed (every two years), but was not repeated after the first iteration. Overall, it was indicated by national experts that ERS are either seen as not providing enough information within their country context to be used systematically, or employers are already involved in other, overarching feedback

programa Nr. 2016 – 0783/001-001', vykdytą Lietuvos Kvalifikacijų ir profesinio mokymo plėtros centro.

⁽³⁷⁾ In national language: *Lietuvos verslo darbdavių konfederacijos atliekamas darbdavių pasitenkinimo profesinio mokymo įstaigų absolventų, dalyvaujančių Erasmus+ mainų programoje kompetencijomis ir kvalifikacijomis tyrimas* (LEC, n.d.).

⁽³⁸⁾ In national language: *Meting tevredenheid werkgevers: Aansluiting MBO – arbeidsmarkt* (SBB, 2018).

⁽³⁹⁾ A member of the Dutch House of Representatives at the time.

⁽⁴⁰⁾ In national language: *monitor empleo: necesidades de formación en la Comunidad de Madrid*.

mechanisms for (VET) education so further surveys would only lead to increased administrative burden for employers.

Sections 3.2-3.7 analyse and discuss the following design features of these ERS:

- (a) the types of organisation involved;
- (b) the main objectives of the ERS;
- (c) the scope (in terms of geography, education level, economic sectors and specified occupations/qualifications);
- (d) the target respondents;
- (e) the general approach;
- (f) the content of the surveys in relation to learning outcomes.

3.2. Types of organisation involved

For the seven examples studied, it was found that the surveys are most often initiated by government authorities, though they are generally conducted by a secondary partner such as a research institute (as seen in Spain) or tripartite party (as seen in the Netherlands). The Australian ESS is commissioned by the Australian Government Department of Education and Training; it was originally developed and pilot tested by the Workplace Research Centre (WRC) at the University of Sydney and currently conducted by the Social Research Centre. One example from Lithuania is an exception (Lithuania-1, QA). In this case, the government authority is also the one conducting the survey. For two examples where a non-government authority was the initiator, the same organisation conducts the survey (Lithuania 2 (SCQ) and Austria). Table 4 provides an overview of the parties involved for the selected examples, as well as their roles in terms of initiating and coordinating/conducting the survey.

In the Austrian case, the ERS was initiated by a (higher) VET provider, one of the universities of applied sciences, the UAS Carinthia. Government organisations involved are generally education departments (Australia, Ireland, Netherlands). Only Spain is an exception in this regard: the government authority initiating the ERS is an autonomous community (i.e. with its own parliamentary system), one of 17 across Spain. When the survey is conducted by a party other than the initiator (Australia, Ireland, Netherlands, Spain), this is generally done by research institutes. The exception is the Netherlands, which is the only example of a tripartite organisation being involved in either roles.

Table 4. **Overview of initiators and coordinators/conductors for the six examples selected**

ESS example	Initiator(s)	Coordinator(s)/conductor(s)
1. AT	VET (HE) provider: University of Applied Sciences (UAS)	VET (HE) provider: University of Applied Sciences
2. AU	Government authority: Australian Government Department of Education and Training	Research institute (private company): The Social Research Centre owned by the Australian National University (ANU)
3. ES	Government authority: <i>Comunidad de Madrid</i>	Research institute (private company): <i>Simple Lógica Investigación SA</i>
4. IE	Government authorities (joint project): the Higher Education Authority (HEA), which led the project ⁽⁴¹⁾ ; the Irish further education and skills service (SOLAS), responsible for FET ⁽⁴²⁾ ; The Department of Education and Skills; Quality and Qualifications Ireland ⁽⁴³⁾	Research institute (private company): Fitzpatrick associates economic consultants
5. LT 1	Government authority: The Centre for the Development of Qualifications and Vocational Education and Training of Lithuania	Government authority: The Centre for the Development of Qualifications and Vocational Education and Training of Lithuania
6. LT 2	Employer association: Business Employers Confederation of Lithuania	Employer association: Business Employers Confederation of Lithuania
7. NL	Government authority: Ministry of Education, Culture and Science	Tripartite organisation ⁽⁴⁴⁾: Foundation for Cooperation on Vocational Education, Training and Labour Market (SBB)

Source: Cedefop based on country templates.

⁽⁴¹⁾ HEA is the national agency with responsibility for the effective governance and regulation of higher institutions and the higher education system. It is accountable to the Minister for Education and Skills, and its board includes representatives from higher education and business but no trades unions). HEA drove the 2013 and 2015 surveys; VET content was increased for the 2018 survey.

⁽⁴²⁾ SOLAS is an agency of the Department of Education and Skills and is governed by a board, made up of representatives from VET providers, the third sector, and businesses (no trades unions, currently).

⁽⁴³⁾ An independent State agency, responsible for promoting quality and accountability in education and training services, whose board comprises people from a range of backgrounds, including the Union of Students in Ireland.

⁽⁴⁴⁾ Collaboration between government, employer and worker representatives.

3.3. Main objective of an employer reflection survey

In examining the main objectives of the selected examples, an initial observation is the extent to which they relate to the scope of this study: the relevance of skills; focus on VET graduates; and involvement of employers). Most of the examples (four) can be linked directly to VET graduates. In the Netherlands, the survey can be linked to VET graduates at EQF levels 1 to 4, while Ireland is linked to both VET and higher education graduates. The narrowest target group is seen in Lithuania, where both examples focus on a subset of VET graduates: the survey related to quality experience (LT 1) is aimed at all VET graduates (at EQF levels 3-4), while the survey related to international mobility (LT 2) is only for those involved in Erasmus+ projects aiming at (learning) mobility between 2017 and 2018 (Social Research Centre, 2019, p. 6).

In the Austrian case the objective to establish and develop good contacts with the main employers in the region was expressed; this could be seen as a secondary goal for the prototype to be developed within the scope of this study. It is also as a potential (positive) side effect of systematically performing an ERS in general, especially in terms of involving employers who feel unheard (not already included in existing feedback mechanisms, etc.). Table 5 presents an overview of the main objectives of the ERS examples that were selected.

Table 5. **Main objectives of ERS, by country**

Country	Main objectives
1. AT	<ul style="list-style-type: none"> Establish and develop good contacts with the main employers in the region Obtain information which could be of interest for the future development of different study programmes and curricula
2. AU	<p>To measure, help monitor and better understand:</p> <ul style="list-style-type: none"> The specific skills and attributes employers need in their business How well higher education is equipping graduates for the workforce <p>The objective explicitly refers to 'employer views of the technical skills, generic skills and work readiness of recent graduates provide assurance about the quality of Australia's higher education sector' (Social Research Centre, 2019, p. 6).</p>
3. ES	<p>To determine:</p> <ul style="list-style-type: none"> Mismatches in the qualification of the personnel (internal or external) of the companies based in the Community of Madrid Training needs for employed and unemployed workers
4. IE	<p>Ascertain employers' views on:</p> <ul style="list-style-type: none"> Overall quality of recent higher education and FET graduates Barriers to graduate recruitment Collaboration between business and education institutions

Country	Main objectives
4. LT 1	To evaluate: <ul style="list-style-type: none"> The quality of the VET provision, as a part of development of the national VET quality assurance programme The employers' satisfaction in skills and competences of graduates
5. LT 2	To evaluate: <ul style="list-style-type: none"> The contribution of the international mobility of the VET graduates to their competence development The satisfaction of employers with the skills and competences of recently employed graduates, before and after the Erasmus+ mobility ⁽⁴⁵⁾
6. NL	To measure: <ul style="list-style-type: none"> The satisfaction of employers with the match between the education (VET) programmes ⁽⁴⁶⁾ and the labour market needs, based on data from training companies hiring recent VET graduates (e.g. MBO).

Source: Cedefop based on country templates.

In terms of the extent to which these examples refer to learning outcomes, Table 5 shows that these are not explicitly mentioned in the main objectives of any of the selected examples, although they are implied in the two examples from Lithuania as these aim at evaluating the satisfaction of employers with the skills and competences of graduates (LT 1 and LT 2) and in the example from Australia.

3.4. Survey scope

In the ERS examples studied, the scope in terms of geography was generally either regional (Spain, Austria) or national (Australia, Lithuania, Netherlands). Ireland differed in that the ERS is conducted at national level but also distinguishes between Dublin and outside Dublin. In Austria, the survey is conducted in only one specific region, Carinthia, while in Spain, the survey is aimed at one of its 17 autonomous communities, the Community of Madrid. Lithuania (ESS 1 and 2), the Netherlands and Australia are national surveys.

In terms of education levels covered, the most specific ERS examples were those from Lithuania, where the surveys are aimed at (employers of) graduates at EQF levels 3 and 4. The least specific example was the Spanish case, which aims at graduates of all EQF levels. The Dutch ERS refers to all VET graduates, corresponding to EQF levels 1 to 4, while the examples from Australia, Austria and

⁽⁴⁵⁾ The newly employed VET graduates were offered mobility for the on-the-job training in the other EU countries.

⁽⁴⁶⁾ More specifically, the MBO levels 1-4, which correspond to the Netherlands qualifications framework (NLQF) and EQF levels 1-4.

Ireland are aimed at higher EQF levels: Austria: 6 and 7; Ireland: 5 to 8; Australia at higher education.

For economic sectors, most of the ERS analysed either cover a specified range of NACE codes (Spain, Ireland), or they are aimed at a specific set of sectors (Austria, Lithuania 2, Netherlands) which may overlap between examples (using the same or at least similar sectors). The exception is one of the examples from Lithuania (LT 1) which is not specific to economic sectors and instead covers all economic sectors and areas. The Irish ERS was structured to be representative across NACE codes (reporting at NACE level 1), while the Spanish ERS covers all two-digit 2009 national classification of economic activities (CNAE) sectors, corresponding to the statistical classification of economic activities in the European Community (*nomenclature statistique des activités économiques dans la Communauté européenne*, NACE level 2). Table 6 provides an overview of the sectors as specified for the ERS examples in Lithuania (LT 2), Netherlands and Austria.

Table 6. **Overview of economic sectors identified in ERS examples**

Country	Number of sectors defined	Economic sectors
LT 2	6 sectors	<ul style="list-style-type: none"> • Agriculture • Construction • Engineering industry and ICT • Healthcare • Services to persons • Transport and logistics
NL	8 sector chambers ⁽⁴⁷⁾	<ul style="list-style-type: none"> • Business services • Food, green and hospitality • Healthcare, wellness and sports • ICT and creative industries • Mobility, transport, logistics and maritime • Technique and built environment • Trade • Specialistic craftsmanship
AT	4 sectors	<ul style="list-style-type: none"> • Building, construction, architecture • Business and management • Engineering and IT • Health and social care

Source: Cedefop based on country templates.

⁽⁴⁷⁾ The company conducting the survey (SBB) has categorised every existing study programme into one of eight sector chambers.

In terms of the focus on specific occupations, only two of the ERS examples covered a specific set: those in Lithuania (LT 2) and Austria. In the Austrian ERS, a set of highly skilled occupations in the respective (four) sectors are specified, and the Lithuanian ERS (2) focuses on 22 selected professions within their respective set of (six) sectors ⁽⁴⁸⁾. Table 7 presents an overview of the selected professions as seen in the ERS examples for Lithuania and Austria.

Table 7. **Occupations specified in ERS (LT 2, AT), by corresponding economic sector**

ESS example	Economic sector	Occupations
LT 2	Agriculture	Agriculture worker
	Construction	Plasterer, road builder
	Engineering industry and ICT	Welder, fitter, CNC operator, ICT network administrator, java software designer, adjuster of hardware, internet designer, electronic technician for energy sector, equipment maintenance worker, mechatronic of automated systems
	Healthcare	Healthcare assistant, cosmetologist
	Services to persons	Hairdresser, cook, waiter, SME business assistant, social care worker, producer of publicity measures
	Transport and logistics	Logistics operator
AT	Building, construction, architecture	Among others: architects, planners, building and construction managers, etc.
	Business and management	Among others: public management specialists, tourism managers, managers for SMEs, business and administration specialists, marketing specialists, etc.
	Engineering and IT	Among others: high-tech manufacturers, electrical engineers, electronics specialists, IT specialists, hardware and software specialists, etc.
	Health and social care	Among others (*): social workers, streetworkers, nurses and health care managers, dietologists, radiologists, midwives, logopaedics, ergotherapists, biomedical analytics, etc.

NB: (*) This does not include medical doctors.
CNC stands for computer numerical control.

Source: Cedefop based on country templates.

Even though there is considerable overlap in the sectors, occupations included in the Austrian example can be considered higher positions compared to Lithuania. This is to be expected, considering the differences in the EQF levels the examples cover: EQF levels 6 and 7 in Austria, as opposed to levels 3 and 4 in Lithuania.

⁽⁴⁸⁾ These occupations were surveyed in 2017. The list of surveyed occupations may change and expand each year.

Overall, it seems that the more specific or detailed the distinction – in terms of economic sectors and professions within them – the more difficult it becomes to find similarities between examples (and between countries) due to differences in phrasing. Having to match categories manually, based on their context or the development of overarching terms to group categories under (through post coding), would require an increase in workload. It would also depend on the person performing the manual matching or post coding, allowing for interpretation bias that could be avoided by using a more commonly known set of broad definitions (or defining them specifically for the survey) such as the NACE classification (at the lowest level of detail, L1) or occupational groups.

3.5. Targeted respondents

Except for Lithuania – which targets multiple parties (including providers, graduates, employers and teachers) – all ERS examples analysed were found to target employers as the main survey respondents. The Australian example, however, draws its sample from respondents from a prior graduate survey (graduate outcomes survey, GOS), generally without an explicit demarcation in terms of inclusion or exclusion criteria (such as a minimum company size). Only the ERS examples identified in Australia, Ireland and the Netherlands have specified a demarcation for the graduates to be assessed:

- (a) in Ireland, for the purposes of the ERS survey, a graduate was defined as someone who has been recruited within the past 24 months, and who has also completed their higher education or FET qualification within the past 24 months;
- (b) in the Netherlands, the graduate has to have been in employment at the company for at least six months and needs to have obtained their qualification within the past two years to be considered a recent graduate. Additionally, if several recent graduates have been in employment for at least six months, the employer is to assess the one that was most recently hired;
- (c) in Australia, the ERS included workplace supervisors of higher education graduates (not self-employed or working in a family business) who completed the GOS).

These demarcations are similar in so far as they both define that a (recent) graduate should have obtained their qualification in the past two years, but are different in how recently the graduates should have been hired by the employer. The Irish example has the broadest demarcation in this regard, as including graduates hired within the past 24 months would also include those hired as recent

as a few weeks; for the Netherlands, a minimum employment period is included in the demarcation (of at least six months). Considering that it generally takes time for an employer (or manager/supervisor) to get a good sense of the graduate's skills overall (and for graduates to showcase them at their new job), it would be better to include a minimum requirement on employment period in the prototype. Doing the same for how recently the qualification was obtained, however, could exclude graduates that were employed almost immediately after graduation (or already employed before) and would not be recommended for the scope of this study. Table 8 provides an overview of the demarcations used within this context (if at all) for the selected ERS examples.

Table 8. **Overview of target respondent demarcations and descriptions identified in the ERS examples**

ESS example	Demarcation	Description
AT	No specific demarcation, as respondents were already registered in a database maintained by UAS Carinthia.	Key employers in the region had been identified before the interviews took place. However, the notion of key employers has not been defined more precisely.
AU	No specific demarcation for identification of possible respondents.	The only demarcation is that the graduate is not self-employed or working in family business
ES	No, the survey refers to all current company personnel, and the future hiring expectations for new employees.	Overall, the survey targets companies of the Community of Madrid, with two or more workers, in the most representative branches of activity (e.g. with more than 5 000 workers). It also includes a survey for senior managers and personnel training managers ⁽⁴⁹⁾ .
IE	Not for respondents, only in terms of defining graduate.	For the purposes of the survey, a graduate was defined as someone who has been recruited within the past 24 months, and who has also completed a higher education or FET qualification within the past 24 months.
LT 1	No specific demarcation for identification of possible respondents.	There are four survey questionnaires proposed for the VET providers. These survey questionnaires are designed for the VET graduates, VET students, VET teachers and employers.
LT 2	No specific demarcation for identification of possible respondents.	Both employers and graduates are surveyed, by providing the description of competences for self-evaluation and for evaluation of the progress of graduates in their competence development.

⁽⁴⁹⁾ Which asks them about the occupational structure of their company, current, past and expected number of workers per job, retirement and replacement, active hiring of workers, training needs for their current staff and for candidates who are in the labour market, and organisational changes that may be affecting the respondent's activity and that of their staff.

ESS example	Demarcation	Description
NL	<p>Yes, for both companies and graduates.</p> <p>Companies were selected from the registry maintained by the conducting party (SBB), specifying those companies that currently have one or more recent VET graduates in employment.</p> <p>Companies were excluded from the sample if they:</p> <ul style="list-style-type: none"> - did not have a valid email address for the VET-training contact person; - were not located in the Netherlands. 	<p>For this survey, the recent graduate refers to those who have been in employment there for at least six months and have obtained their qualification within the past two years. An addition to the demarcation is that If multiple recent graduates have been working for at least six months, the employer is to assess the one that was most recently hired.</p> <p>Further, it is important to note that – for the 2016 iteration – only recognised training companies were included in the target population, while the 2017 iteration also included other organisations (i.e. non-training companies and/or unrecognised training companies). Since there were no significant differences found between recognised and non-recognised organisations (and the increase in administrative costs for obtaining the supplementary data from the Central Bureau of Statistics, CBS), future iterations of this survey are expected to only include recognised companies in the target population.</p>

Source: Cedefop based on country templates.

Regardless of the fact that most examples were found not to have specified a demarcation for the target respondents, it is possible to deduce some (less implicit demarcations), since most of the ERS examples indicate having done some preselection (sampling) beforehand:

- (a) in Austria, the UAS Carinthia identified key employers in the region from a database of employers for graduates and students of UAS Carinthia study programmes; in some cases these were specific key persons within the organisation that were already known to UAS Carinthia;
- (b) in Ireland, the survey sample was drawn from an existing database of companies by setting quota controls on several factors before using random selection of companies;
- (c) in Spain, even though no specific demarcation was defined, the sample was drawn from a database of companies of the Community of Madrid, including only those with two or more workers in the most representative branches of activity (for example those with more than a total of 5 000 workers across companies);
- (d) in the Netherlands, the SBB drew the sample from their registry of recognised training companies, on the condition of currently having one or more recent VET graduates in employment; they further specified that the graduate has to have been employed there for at least six months, and has obtained their qualification within the past two years.

It is important to note that most of the examples indicate the use of an existing database or registry, of either learners or employers. One other approach identified is using the full sample for a selected project/programme, as seen in one of the ERS examples in Lithuania 2. In this case, the sample included the enterprises belonging to the employers' organisation in Lithuania and those in the other

countries that accepted graduates for the Erasmus+ mobility traineeship organised by the employers' organisation.

From the demarcations and sampling approaches discussed in this section, we can distinguish between two aspects or types of demarcations, within the scope of this study:

- (a) graduate demarcations (as seen in Ireland, Netherlands), such as:
 - min/max length of current employment ⁽⁵⁰⁾;
 - how recently the qualification was obtained;
 - whether to consider one specific graduate or all recently hired graduates that fit the demarcation (i.e. overall satisfaction score);
- (b) employer/company demarcations (Spain, Netherlands), such as:
 - company size (for example minimum number of employees);
 - sector(s) they are active in;
 - region(s) they are active in;
 - whether they have hired a recent (VET) graduate.

3.6. General survey approach

Approaches identified in the ERS examples selected are similar in that they directly contact the potential respondents, either by email or by telephone, with one exception: for the Lithuanian quality assurance ERS (Lithuania 1), respondents were contacted by the providers. In terms of the methods used for conducting the survey itself, it was found that, generally speaking, either digital surveys were used or (semi-structured) interviews; only Lithuania allowed respondents to choose between a paper questionnaire or completing the survey online. To provide additional insights, the approach in terms of identifying and contacting respondents, and in terms of how (and how often) the survey is to be conducted, is discussed below for each example.

In Austria, employers were identified through the VET provider, in this case also the conductor of the survey. The University of Applied Sciences Carinthia (*Fachhochschule Kärnten*) maintains a database of employers for graduates and students during their entire practical phase. They approached directly those who, in their view, were the 'most important', to schedule face-to-face interviews, of which a total of 40 were conducted (from an initial sample of 60). In some cases,

⁽⁵⁰⁾ A maximum could be used to prevent misleading results, for example when graduates that are employed for longer periods are assessed with higher satisfaction scores due to them having improved their skills through performing their job (i.e. by putting them into practice) instead of being correlated/linked to the quality or relevance of the skills as they were taught during their education.

specific key persons within the employer organisations were already known to UAS Carinthia. The interviews lasted between 30 to 60 minutes each and were based on guidelines, as well as a questionnaire, developed by those responsible for the study programmes (or heads of faculties). In terms of timeline and frequency, this example is considered a one-off study, conducted in 2014 in preparation for institutional evaluation by the Austrian Quality Assurance body for Higher Education (AQ Austria), which took place in 2015.

In Ireland, employers were identified through the Bill Moss and Associates' database of companies. Quota controls were generated for company size, sector and region to ensure representation across NACE codes (at level 1) – based on the most recently available Central Statistics Office (CSO) statistics for businesses in Ireland – and then a sample of 8 936 companies was randomly selected. Some 6 986 of these leads were contacted, with a final sample of 760 companies being surveyed, in line with the targeted sample of 750 employer organisations ⁽⁵¹⁾. A computer-assisted telephone interviewing (CATI) telephone survey was conducted between June and July in 2018, with a total of 181 companies indicating they had hired FET graduates (47 in Dublin, 134 outside Dublin). The CATI approach was introduced for the 2018 survey partly to ensure the SME base was properly represented, unlike in the previous surveys where companies completed the surveys themselves. The 2018 survey (published in January 2019) is the third iteration, following previous surveys in 2013 and 2015. However, since the random sampling approach was introduced in 2018, there is a break in the timing and it has not yet been decided when the next survey will be carried out ⁽⁵²⁾.

In Spain, employers were identified through stratified random selection from the DUAE database (2013 directory of local units of economic activity), supplied by the Directorate-General for employment strategy and development with a total of 65 535 companies. After sample selection, the contact information of employers was obtained through the same registry and the survey was conducted through computer-assisted telephone interviewing, with each interview taking a global average of 12.12 minutes (10.59 minutes in companies with two to nine workers and 38.90 minutes for those over 250). These interviews were carried out by a team of simple logic surveyors, with proven experience in conducting business interviews, trained in the specific aspects of this work. In terms of timeline, the

⁽⁵¹⁾ Of the 6 986 organisations contacted, 2 180 declined to complete the survey, 1 768 registered an engaged dial tone or went straight to voicemail, 1 587 requested that the interviewer called back at another time, 497 did not fit any of the quotas required, 194 were no longer trading and 760 completed the survey.

⁽⁵²⁾ This is due to the fact the next iteration is not included in the 2019 SOLAS work plan and will be decided by SOLAS and the HEA.

initial expectation was to conduct the survey every two years, but it has not been carried out again since 2015.

In Lithuania 1, potential respondents (graduates, their employers and their teachers) were identified and contacted through VET providers (who are also target respondents themselves) using their existing networks, or through students, graduates or other social partners. Four questionnaires were prepared to measure the satisfaction of these main target groups, allowing analysis of quality measurement instruments and good practices in Lithuanian general education, vocational training and higher education institutions. The employers were approached directly by the VET providers, and, for all target groups, the surveys could be executed through a printed questionnaire or by completing the questionnaire online, taking on average between 10 and 15 minutes. These surveys can be executed regularly (for example annually), as well as on specific occasions, such as self-evaluation of the activities implemented by VET providers before the external quality evaluation.

In Lithuania 2, the Business Employers Confederation of Lithuania – which is also the coordinator of the corresponding Erasmus+ mobility projects – selects the employed VET graduates for Erasmus+ mobility training in other EU countries. The information about such graduates is received from the graduates themselves, who apply for the Erasmus+ mobility after graduation from VET school, as well as from the enterprises (members of confederation) which employ these graduates. This survey is only conducted among graduates that participated in Erasmus+ mobility organised by the employer confederation, surveying approximately 50 graduates each year. Frequency depends on the organisation of these projects, as the survey is executed immediately after the completion of each traineeship. Group discussions and consultations are organised after the exercises, where participants present their acquired experiences.

In the Netherlands, employers were identified through the independent (tripartite) organisation conducting the survey (SBB), which maintains its own registry of recognised training companies. For the first iteration (2016), only recognised training companies were selected for inclusion in the sample. Potential respondents were contacted by email to determine whether they have hired recent VET graduates, and if so, to request their participation in the (online) survey. For the second iteration, however, regular organisations (non-training or unrecognised) were approached as well, following a request from the Ministry of OCW. For the expansion of the sample, the SBB cooperated with the Central Bureau of Statistics: this organisation maintains the (national) general organisations registry (*Algemeen Bedrijven Register*) and also keeps track of which organisations have hired recent (VET) graduates. The Central Bureau of

Statistics (*Centraal Bureau voor de Statistiek*, CBS) was responsible for the sampling, fieldwork and data preparations in 2017, while SBB performed the analyses and drafted the report. Potential respondents received a letter from CBS, requesting them to participate through an online survey. The letter contained a login code and (unique) user number to allow access to the online survey, which is estimated to take between 5 to 15 minutes; non-respondents were reminded with another two letters. The survey is to be conducted once every two years and future iterations will follow the set-up of the first iteration. Given that the analysis report showed that differences between recognised and non-training companies were so minimal (if any at all), the next iteration will, again, only draw its sample from recognised training companies (without the increased costs from collaborating with CBS).

In Australia, the general approach is to work together with the higher education institutes to finalise the questionnaires and invite the graduates. They are asked to provide contact details of the employers as well. At the end of the graduate outcomes survey, all graduates in employment (but not self-employed or working in a family business) were asked to provide details (name, email and/or phone number) of their current supervisor, so that the supervisor could be invited to take part in the ESS. Promoting the ESS involved reaching out to both graduates and employers through institutions and various key organisations. A number of peak bodies – including the Australian Association of Graduate Employers (AAGE), the Australian Institute for Teaching and School Leadership (AITSL) and the National Association of Graduate Careers Advisory Services (NAGCAS) – were also made aware of the ESS through conferences and meetings (Social Research Centre, 2019, p. 11). Dual methodologies were utilised in the 2018 ESS, with online and CATI workflows established to support supervisor participation. The online workflow was activated as the primary workflow for all records with a valid email address. If a supervisor did not respond to the email invitation or reminders, they were then entered into the CATI follow-up workflow where a phone number had been provided. As described in the national report, the population of the ESS consisted of 95 121 domestic and international graduates, who responded in the 2018 GOS that they were employed. Of these, 10 216 employed graduates provided sufficient contact details to approach supervisors, yielding a supervisor referral rate of 10.7%. From direct supervisors, a total of 5 311 valid survey responses were collected across all study levels, representing a supervisor response rate of 52% (QILT, 2019, p. vi).

None of the selected examples were found to include specific incentives to stimulate participation by respondents (no financial incentives or obligated participation). The surveys and studies identified show several channels through

which the contact information of the target group can be obtained (as well as for contacting them), for both graduates and employers:

- (a) through education institutions;
- (b) through employers;
- (c) through employed graduates;
- (d) through government administrative offices (such as citizen's administration).

Another channel, however, has not been used in the ERS examples selected: the option to publish an open invitation on digital platforms. These may include newsfeeds for students/graduates maintained by education institutions or those aimed at employees of companies, or social media (LinkedIn, Facebook and other news channels). Depending on the design of the desired survey, the available methods of survey completion (paper, online, phone) and the target groups identified, several channels can be combined in order to maximise exposure and increase response rates.

3.7. Content of the questionnaires

Few of the examples studied had a specific focus on learning outcomes, while most surveys do include a measure/set of concepts similar to learning outcomes. None includes a way to assess the proficiency levels related to the learning outcomes (vertical dimension). To provide additional insights, the content of the questionnaire in terms of the intended unit of analysis was examined: who/what is assessed (which is generally not the respondent him/herself), how and which learning outcomes are included, and, if the vertical dimension of learning outcomes was addressed. The following was found in terms of the survey content.

In Austria, the survey aims to gain insight into the satisfaction of employers with the competences of graduates from UAS study programmes, specifically those at UAS Carinthia. It also seeks information on what kind of competences will develop within the coming years, so that the UAS can redevelop study programmes according to future labour market needs (differentiated in bachelor and master qualification levels). The survey should also help to reflect the distinction of competences acquired in bachelor and master courses from employers. The academic distinction was seen as not fitting into employers' human resources (HR) decisions. In terms of analysis, a distinction is made between bachelor and master graduates and between labour market sectors (for example economic sectors) related to the main study fields. Learning outcomes are only presented in open questions and are based on an existing classification (by Erpenbeck and von Rosenstiel, 2003), which distinguishes between five categories

of competences. The vertical dimension of learning outcomes is not directly addressed in this survey.

In Ireland, the survey aims to provide insights into employers' views on overall quality of (FET and higher education) graduates, as well as their satisfaction levels across a range of attributes. The vertical dimension is not addressed in this survey. Learning outcomes are presented as a range of workplace attributes that employers are asked to provide their satisfaction with, broadly related to learning outcomes. A set of personal attributes is also presented. These lists of attributes were mainly elaborated from areas of concern, as expressed by employers, in terms of the skills they perceived to be poorly developed among graduates.

The survey in Spain is not actually linked to specific graduates, but rather to qualifications or groups of qualifications (by sector, EQF level or another grouping factor). The analysis focuses on training modules (which are similar to learning outcomes), by asking an open question about the type of training required by employers for each type of occupation; the responses are then codified following similarity with existing training modules, as seen in the national catalogue of professional qualifications (*catálogo nacional de cualificaciones profesionales*, CNCP). Training modules can be compared with sets of learning outcomes, but this does not allow for addressing the vertical dimension (hierarchy of complexity).

In Lithuania 1, the survey aims to evaluate the effectiveness of VET programmes – in accordance with the Erasmus programme on VET quality assurance national guidance point activities – by providing insights into employment of graduates and their careers after graduation. In terms of learning outcomes, it follows a typology of work/occupational specific and key skills. The vertical dimension of learning outcomes is not addressed in this survey.

In Lithuania 2, the aim is also to evaluate the effectiveness of VET programmes – more specifically the Erasmus+ mobility traineeship – by assessing the achievements of the VET students and graduates during the practical training and work executed during the mobility visit abroad. In terms of learning outcomes, the competences are described following the vocational qualifications transfer system (VQTS) competence matrix⁽⁵³⁾, which distinguishes between areas of competence development and the steps of competence development which consist of partial competences. These competences are arranged in this matrix following the didactic principle (for example from simple to more complex), so it gives some insight into the vertical dimension of the learning outcomes. No distinction is made between knowledge and skills.

⁽⁵³⁾ The VQTS model was also used as one of the reference points in WA1, see Luomi-Messerer, 2009.

In the Netherlands, even though the survey is aimed at employers, the questions asked and information retrieved are for the recent graduate that the employer selected to assess. If multiple recent graduates have been working for at least six months, the employer is to assess the one that was most recently hired. In terms of learning outcomes, this survey includes a list of seven keywords or short statements, representing relevant skills or tasks that an employee can perform. Future iterations will include a separate question for digital literacy, distinguishing between four aspects. It is important to note that the keywords/short statements do not come from an existing typology: the list was originally developed for an unpublished pilot study on the appreciation of VET education among employers. This survey does not address the vertical dimension of learning outcomes.

The Australian ESS consists of the following modules:

- (a) module A: introduction and screening;
- (b) module B: overall graduate preparation;
- (c) module C: graduate attributes scale, employer (GAS-E);
- (d) module E: institution specific items;
- (e) module F: close.

The ESS does not refer to specific learning outcomes of qualifications. Instead, it gathers information on the overall graduate preparation in relation to the qualification of the selected graduate ⁽⁵⁴⁾. Supervisors can also provide information on the main ways that the qualification prepared the graduate for employment and in what ways it could have done this better. Essentially, this line of questioning allows for gathering information on the intended (and achieved and observed) skills of a wide range of qualifications in their respective occupations, as the supervisors are asked to consider only one specific graduate. Further, the ESS has developed their own skills classification (in 2017) which distinguishes between five overarching types of graduate skills. Supervisors are presented with sets of attributes and skills for each of these five types and asked to indicate the extent to which they agree that the specific skill or attribute has prepared the graduate for the job.

In terms of the way in which learning outcomes are presented – within a context of using typologies of learning outcomes (skills and competences) – all

⁽⁵⁴⁾ This includes questions on: whether the obtained qualification is a formal requirement for the graduate's current job (Y/N); to what extent it is important for the graduate to have this qualification or a similar one to do their job well (five-point scale, 'not at all' to 'very important'); and whether they would hire someone with the same qualification for a relevant vacancy.

ERS examples indicated using either an existing or developed typology. Table 9 provides an overview of the typologies used for each respective ERS example.

Table 9. **Overview of typologies identified in ERS examples**

ERS example	Existing typology?	Description/categories
AT	<p>Yes Classification of categories of competences, as designed by Erpenbeck and Rosenstiel, 2003</p>	<ul style="list-style-type: none"> • Professional know-how • Implementation competence • Problem-solving competence • Ability to work in a team • Ability to communicate
AU	<p>Yes Following the graduate attributes scale, which consists of five overarching skill types, along with a specific set of attributes or skills for each skill type</p>	<p>Five overarching skill types:</p> <ul style="list-style-type: none"> • Foundation skills: regarding general literacy, numeracy and communication skills and the ability to investigate and integrate knowledge • Adaptive skills and attributes: regarding the ability to adapt and apply skills/knowledge and work independently • Teamwork and interpersonal skills: regarding teamwork and interpersonal skills • Technical and professional skills: regarding the application of professional and technical knowledge and standards • Employability and enterprise skills: regarding the ability to perform and innovate in the workplace <p>(*)</p>
ES	<p>Somewhat The open-answered training needs are codified – following their similarity with existing training modules, as seen in national catalogue of professional qualifications</p>	<p>This resulted in the following typology for the training needs:</p> <ul style="list-style-type: none"> • Technical formation • Personal or managerial skills • Computing: tools or programmes • Languages • New or emerging issues • Unimportant training needs (i.e. those indicated less than five times across respondents)

ERS example	Existing typology?	Description/categories
IE	<p>Yes Classification of workplace attributes and personal attributes</p>	<p>(a) Workplace attributes:</p> <ul style="list-style-type: none"> • Computer and technical literacy • Working effectively with others • Effective verbal communication • Numeracy/processing/interpreting data • Effective written communication • Working effectively on their own • Application of technical knowledge • Attention to detail • Commercial awareness • Entrepreneurial skills • Foreign language capability <p>(b) Personal attributes:</p> <ul style="list-style-type: none"> • Professionalism and work ethic • Reliability • Positive attitude • Ethically and socially aware • Personal commitment • Adaptability and flexibility <p>Ability to cope with work pressure</p>
LT 1	<p>Somewhat The survey follows a typology of specific and key workplace/occupation skills</p>	<p>Overview of specific and key workplace/occupation skills:</p> <ul style="list-style-type: none"> • Application of theoretical knowledge in practice • Application of practical skills • Respecting work safety requirements at work • ICT skills and ICT literacy • Abilities to work with documents • Abilities to learn to work with new techniques and technologies • Communication skills (with customers and colleagues) • Following quality requirements at work • Foreign language skills • Ability to work in team • Ability to work independently • Responsibility and fair attitude to work • Positive attitude to work • Working culture • Other (please indicate)
LT 2	<p>Yes Following the method of describing them in a VQTS competence matrix</p>	<p>In this matrix, for each separate qualification/profession, areas of competence development are defined and split into the necessary steps of competence development, as well as the partial competences they consist of. Last, the steps of competence development and their partial competences are arranged by following the didactic principle – from simple to more complex.</p>

ERS example	Existing typology?	Description/categories
NL	<p>Somewhat Following a set of keywords or short statements on the relevant skills or tasks an employee can perform, developed for an unpublished pilot study.</p> <p>Additionally, a separate question was developed for future iterations of the survey, which describes four aspects of digital literacy (<i>digitale geletterdheid</i>).</p>	<p>List of seven keywords/short statements:</p> <ul style="list-style-type: none"> • Professional knowledge • Occupation-specific skills • Professional attitude • Language and math skills • Relationship with colleagues and supervisors • Willingness to put in effort for the company • Capacity for self-development and to further educate themselves in their field/profession <p>Four aspects of digital literacy:</p> <ul style="list-style-type: none"> • ICT base skills: efficient use of soft- and hardware • Media literacy: conscious, critical and active use of media • Computational thinking: using ICT-tools for problem-solving • Information skills: efficient collecting and processing of information using ICT

(*) The full overview of attributes and skills per overarching skill type is presented in Table 10.

Source: Cedefop based on country templates.

As Table 9 shows, there is great variation in the way(s) learning outcomes (skills and competences) are part of the ERS identified. It is difficult to identify specific learning outcomes, as they are usually not referred to as such in these surveys; instead, they are implicitly embedded in the typologies and skills lists surveyed. Spain is the only example using an existing resource (catalogue of training modules) to link training needs to. It is these training modules that could be linked to learning outcomes, to some extent. Some of the other examples were found to use a relatively broad set of existing or specifically defined categories (Netherlands, Austria) for skills and competences. Ireland also uses a specific set of categories, though the main difference here is that it distinguishes between workplace and personal attributes – two overarching categories, along with a set of skills for each – which are more specifically phrased compared to those used in the Netherlands and in Austria.

Another key finding from the comparison of the content of the questionnaires and the typologies used is that there is a dominance of transversal skills and/or learning outcomes over occupation-specific skills. When referring to the latter, the typologies include broad categories, such as using professional knowledge or applying occupation-specific skills, without going into the detail of what this entails in specific occupational contexts. This reflects the fact that transversal skills can be surveyed more broadly across different occupations, while occupation-related skills are only applicable for one specific occupation; this makes it challenging to

develop a survey approach that can balance between broad applicability and tailoring to specific occupations. It could, however, also relate to weak links between VET qualifications and occupations, causing the surveys to focus more on transversal learning outcomes that are visible regardless of occupation. This imbalance in skills included in the typologies, highlights a significant challenge for ERS in general: the balance between generality and specificity.

An interesting categorisation in terms of being both broadly applicable to a wide set of qualifications, and including a high level of granularity, can be found in the Australian example. This developed its own typology for the survey, called the graduate attributes scale, that distinguishes between five overarching skill types for graduates, and specifies a set of attributes for each type. The full overview of this typology is presented in Table 10.

Table 10. **ESS graduate attributes scale (GAS-E)**

Skills type	Attributes and skills
Foundation skills	Eight categories: <ul style="list-style-type: none"> • Oral communication skills • Written communication skills • Working with numbers • Ability to develop relevant knowledge • Ability to develop relevant skills • Ability to solve problems • Ability to integrate knowledge • Ability to think independently about problems
Adaptive skills and attributes	Six categories: <ul style="list-style-type: none"> • Broad background knowledge • Ability to develop innovative ideas • Ability to identify new opportunities • Ability to adapt knowledge to different contexts • Ability to apply skills in different contexts • Capacity to work independently
Teamwork and interpersonal skills	Five categories: <ul style="list-style-type: none"> • Working well in a team • Getting on well with others in the workplace • Working collaboratively with colleagues to complete tasks • Understanding different points of view • Ability to interact with co-workers from different or multicultural backgrounds

Skills type	Attributes and skills
Technical and professional skills	Six categories: <ul style="list-style-type: none"> • Applying professional knowledge to job tasks • Using technology effectively • Applying technical skills in the workplace • Maintaining professional standards • Observing ethical standards • Using research skills to gather evidence
Employability and enterprise skills	Seven categories: <ul style="list-style-type: none"> • Ability to work under pressure • Capacity to be flexible in the workplace • Ability to meet deadlines • Understanding the nature of your business or organisation • Demonstrating leadership skills • Demonstrating management skills • Taking responsibility for personal professional development

Source: Social Research Centre, 2019.

This typology has a reasonable number of overarching categories, as well as an average of six specified attributes for each overarching skill type. The terms used for the skills types and attributes are not tailored to specific sectors or occupations, meaning they can still serve as relatively broad/general descriptions. In the balance between generality and specificity, the Australian example provides a bit more detail on the specific occupation-related skills, while still keeping it applicable to multiple occupational contexts (cluster: technical and professional skills).

There is also great variation between ERS examples in terms of how questions regarding learning outcomes were phrased in the survey, as well as the way(s) in which respondents were expected to answer. Except for Spain, which used open text fields to identify specific training needs, most examples used their typologies or classification as a set of scales; these seem to overlap to some extent, although they vary in their answer categories. Table 11 provides an overview of the questions that were within the scope of our study and the scales or answer categories that were used; these support the prototype designed for this study (in Chapter 4).

Table 11. **Overview of questions and scales/answer categories related to assessing skills and competences (broadly linked to learning outcomes)**

ESS example	How are questions regarding learning outcomes phrased to assess satisfaction with them?	Which scale(s) or answer categories were used?
AT	What are the most important competences that bachelor graduates need to have in order to be well matched to your sector/industry? E.g.: (a) professional know-how; (b) implementation competence; (c) problem-solving competence; (d) ability to work in a team; (e) ability to communicate.	N/A
AU	Supervisors are presented with sets of attributes and skills for each of these five overarching skill types (as defined in GAS-E typology) and were asked to indicate the extent to which they agree that the specific skill or attribute has prepared the graduate for the job.	The scale is scored as: 1 = strongly disagree 2 = disagree 3 = neither disagree nor agree 4 = agree 5 = strongly agree 6 = not applicable
IE	(1) Please rate your level of satisfaction with your further education graduate recruits as they relate to the following workplace attributes. (2) Please rate your level of satisfaction with your further education graduate recruits as they relate to the following personal attributes.	The scale is scored as: 1 = All satisfactory 2 = 75% satisfactory 3 = 50% satisfactory 4 = 25% satisfactory 5 = None satisfactory 6 = Don't know/not applicable
LT 1	Evaluate the readiness of our students, who perform the practical training at your enterprise for independent work, according to the aspects and ranking provided, from 1 (very poor) to 5 (very good) (do not consider separate persons, but the totality of students).	The scale is scored as: 1 = Very poor 2 = Bad 3 = Satisfactory 4 = Good 5 = Very good 6 = Not applicable
LT 2	The survey questionnaire consists of a list of partial competences, specifically selected for the qualification in question. It uses a structured format (VQTS matrix) which distinguishes between steps of competence development. Each partial competence is then assessed by the VET student/graduate him/herself, as well as by the representative 'employer' (HR manager, supervisor of practical training).	The scale is scored as: 1 = unable to perform 2 = can perform only with the help of more experienced specialist 3 = can perform independently by using provided written or oral instructions 4 = can perform independently with some supervision 5 = can perform completely independently by attaining required level of quality

ESS example	How are questions regarding learning outcomes phrased to assess satisfaction with them?	Which scale(s) or answer categories were used?
NL	The list of skills/learning outcomes is presented as a set of statements, where the employer can indicate the extent to which they are satisfied with the level of skill of the graduate being assessed on a five-point scale.	The scale is scored as: 1 = (very) bad 2 = bad 3 = not good, not bad 4 = good 5 = very good

Source: Cedefop based on country templates.

Table 11 shows that employers are generally either asked directly for their reflection on a list of skills/statements or more tailored questions (Ireland, Netherlands), or through specifying the readiness of the graduate or ability to perform the skills or attributes in their job (Lithuania 1 and 2). Within the scope of this study, however, the phrasing seen in Austria is closest; it directly asks for the relevance of each (competence) category for graduates in terms of most important for them to be well-prepared for performing the job.

As well as the examples shown in Table 11, some additional questions were used in the Australian ESS that may be of interest within the scope of this study. This includes questions on:

- (a) whether the obtained qualification is a formal requirement for the graduate's current job (Y/N);
- (b) to what extent it is important for the graduate to have this qualification or a similar one to do their job well (five-point scale: not at all to very important);
- (c) whether they would hire someone with the same qualification for a relevant vacancy.

3.8. Challenges associated with employer reflection surveys

The national experts highlighted a number of challenges in designing ERS to capture the relevance of learning outcomes in their national contexts.

The content of qualifications is too heterogeneous to be assessed in a generic ERS tool

Applying ERS for mapping the relevance of learning outcomes can raise issues of the difference between national and regional contents of qualifications. In Ireland, while expected learning outcomes are specified at national level, these represent an approximation of the learning outcomes within programmes. A total of 16 education and training boards (geographically based) devise programmes,

drawing on nationally defined qualification components, and they are increasingly being encouraged to set minimum intended learning outcomes that fit with needs within their areas (rather than copy/pasting them from the national specifications, as typically happens at present). So, programmes need to reflect the national expected learning outcomes, but they may be drafted differently.

In some countries there might be optional parts in qualifications, meaning that the set of learning outcomes on which employers will have to reflect can differ per individual graduate (qualification holder). In Ireland, the national specifications of qualifications contain a significant number of optional components; this may give rise to much variation at local level in the actual experience of learners in what appears to be the same qualification (in terms of its title). Similarly, in the Netherlands, an emerging number of elective parts (*keuzedelen*) are provided, ranging from general education subjects (for instance, another modern foreign language) to specific technical skills training (such as operating drones), making it difficult to collect employers' reflections on a fixed set of learning outcomes.

Qualifications have weak links with occupations and the labour market is not accustomed to reflecting on the content of qualifications

Other challenges relate to whether employers are accustomed to reflecting on learning outcome statements as included in qualifications. In some countries, such as Bulgaria, employers are only recently becoming more involved in discussions concerning the VET system and the VET qualifications; they are not yet familiar with the language of education. Even in countries with a longer tradition of employer involvement in VET, the quality of the reflections on learning outcomes depends on who are the respondents on the employers' side. The respondents can be company instructors directly working with VET graduates, HR managers, or company directors. An adaptation of the language of the VET standards may be needed, meaning that the language of the survey (learning outcomes expressions) may need to be adapted, depending on what type(s) of employer representatives are involved. It is also questionable whether any supervisor of a graduate can oversee the whole set of acquired learning outcomes, including the non-occupation specific and more transversal ones. Answering in a team (within the company), however, would be difficult to implement practically.

Another aspect here is the weak link between qualifications and occupations and jobs. Assessing the relevance of learning outcomes makes more sense when there are close links between qualifications and jobs, i.e. when a specific qualification leads to a specific specified job. This works best in more traditional sectors and in mature VET systems. In some countries, however, these conditions are not in place, leading to graduates finding jobs that are not directly linked to their

qualifications. The satisfaction of employers might, under these circumstances, not say much.

The outcomes are compromised by high levels of subjectivity and low response rates; ERS can be costly

Another set of challenges concern methodological issues, largely related to bias. The measurement of employer satisfaction is always subjective: judgement of whether a graduate possesses the learning outcomes strongly depends on the perspective of the respondent. For example, a very effective, hardworking line manager may find the new recruit not highly productive, and express general dissatisfaction, where the same recruit would be seen as fully satisfactory in another, less judgemental context. Further, employers might have different benchmarks for assessing their satisfaction. One might assess a graduate against expectations for a mature worker, another might assess against expectations for an intern.

There are also methodological challenges over low response rates to employer surveys, due to lack of motivation to engage and attitude in answering questions in general. Employers often have difficulties in providing explicit and trustworthy information on VET programmes. Another problem with standardised surveys is the lack of flexibility to adjust to particular conditions of different sectors of economy or types of enterprises, which can also make some questions irrelevant to employers, or difficult to answer.

ERS are considered costly and if they are designed to reduce costs, they will not be able to look at learning outcomes (particularly occupational ones) at the desired level of granularity. Related to this, there is generally either a lack of institutional and human resources in the economic sectors (sectoral organisations/councils) and social partner organisations or an uneven distribution of resources across sectors to support ERS.

Given these challenges, any national picture of employer reflection at the level of learning outcomes would (increasingly) be an approximation. A more fruitful approach would be to work on lower levels of abstraction, launching small-scale tailored surveys by VET providers to the employers of recent graduates. This increases the relevance of the questions asked, while simultaneously increasing the chances of finding motivated employers, willing to respond.

3.9. Relevance and usefulness of the employer reflection survey

Despite the identified challenges, five of the national experts stated that ERS could be useful in their country because of the opportunities they provide. This is the case for Bulgaria, France, Lithuania, the Netherlands and UK-England. In Bulgaria their value would lie in providing information on VET programmes and the whole VET system, but considerable resources would need to be invested in the development, implementation and evaluation of the results of such surveys to do this. In the UK-England, ERS could be an important feature in the quality assurance and review of qualifications; it is surprising that this is not the case in England, particularly among those who design and market the qualifications. It may be that this is done on a commercially confidential basis, since qualifications are designed and marketed by awarding organisations which, despite their charitable status, compete for learners; even if they were to obtain feedback from employers on their qualifications through ERS, they would be unlikely to release them into the public domain. Some of these awarding organisations have their own research functions ⁽⁵⁵⁾ but there is little evidence of sector skills organisations conducting surveys of this kind ⁽⁵⁶⁾. The State regulatory body, Ofqual, does no more than carry out general perception surveys, which do not provide detailed intelligence on employer reflection with specific qualifications. However, it is unlikely that Ofqual could perform such an exercise comprehensively with the resources currently at its disposal. A further hindrance is the large number of qualifications that exist in the UK, even in the same occupational area with subtle but significant differences between them in terms of learning outcomes. There is an important gap here, which needs to be filled. The absence of strong sectoral employer bodies is a factor, as is also the possible commercial confidentiality of the information gathered. It is likely that such information would provide an important feedback loop between the labour and VET markets, and it would have the additional benefit of providing potential VET candidates with much-needed intelligence when making decisions about which qualifications to pursue. Given that considerable amounts of public money are involved in maintaining the VET market, it could be argued that this is an important government function not yet exercised as vigorously as it should be.

⁽⁵⁵⁾ See, for example, City and Guilds' research:
<https://www.cityandguildsgroup.com/research>

⁽⁵⁶⁾ It should be noted that these are now privatised organisations run on a commercial basis and there may be little or no incentive for them to carry out such work.

In the Netherlands a systematic approach to mapping whether graduates are able to show acquired learning outcomes (as assessed by the employers), is lacking. It could be helpful – at the level of VET institutions – to assess this regularly, to see whether the education and training leads to sustainable outcomes. It could also be relevant at the national level, to inform the renewal process of qualification files, so ERS are used to improve employer engagement in the design of VET qualifications and governance of the VET system. It can also be applied in quality assurance at sectoral levels and inform the delivery of VET programmes at provider level.

In some countries the national expert questioned whether such ERS would be at all useful or desirable in their national contexts. This was the case for Denmark, Ireland, Spain, Austria and Finland. Arguments include the fact that cooperation between VET schools and employers is already carefully monitored and evaluated (in Denmark), so an ERS does not provide added value. In Austria, ERS would not add value to the dual VET system, as the link between the content of qualifications and the labour market is already carefully monitored and VET providers (schools and companies) have to follow centralised curricula. The ERS are more relevant in higher level (higher education) vocational/professional education and training as higher education providers have many more opportunities to develop their own curricula, and do not have to follow centralised curricula. But even there – at least for UAS – governance provides for a crucial role for employers in the design and development of curricula; they must be part of a so-called development team appointed for the accreditation process. More generally, when comparing ‘heartland’ VET (EQF levels 3 and 4) with VET at higher levels (as part of higher education), tripartite arrangements at these higher levels are less developed, so that higher education providers include less systematic input from labour market stakeholders into programme design.

Given the strong links in place within the Member States and feedback arrangements between the labour market and the VET system, the introduction of regular ERS is questioned for producing any vital new input to VET. It may even be perceived as an unnecessary administrative burden by employers. The need to have ERS seems limited in systems where there are strong governance and system links between the labour market and the VET system, and where VET qualifications are governed and delivered in close cooperation with employers. It is likely that in more countries there are already (more direct) feedback loops within the system, to tailor the VET provision to emerging economic and societal needs. The ERS might be more relevant for Member States where the VET system is operating at relative arm’s length to the labour market. In these situations, it could provide a valuable contribution to closing the feedback loop, and in assuring the relevance of the learning outcomes provided within the VET qualifications. When

referring to the main types of feedback mechanism identified in IVET systems in Europe (Markowitsch and Hefler, 2018), the ERS might be more relevant in participatory and statist models compared to coordinated models and liberal models. This is in line with the findings of the Cedefop study *The role of learning outcomes in supporting dialogue between the labour market and education and training: the case of vocational education and training* (Auzinger et al., 2017). This study concluded that 'learning outcomes descriptions are able to facilitate continuous dialogue, or multiple feedback loops throughout the entire process from developing/renewing qualifications to the delivery of VET programmes and finally the certification and the integration of graduates into the labour market. At all these stages, relevant stakeholders (employers, education providers) can use the learning outcome descriptions to inform the VET system of necessary changes' (Auzinger et al., 2017, p. 130). Learning outcomes facilitate discussions within the process of delivering VET qualifications and make external feedback loops (through quantitative surveys) less relevant.

CHAPTER 4.

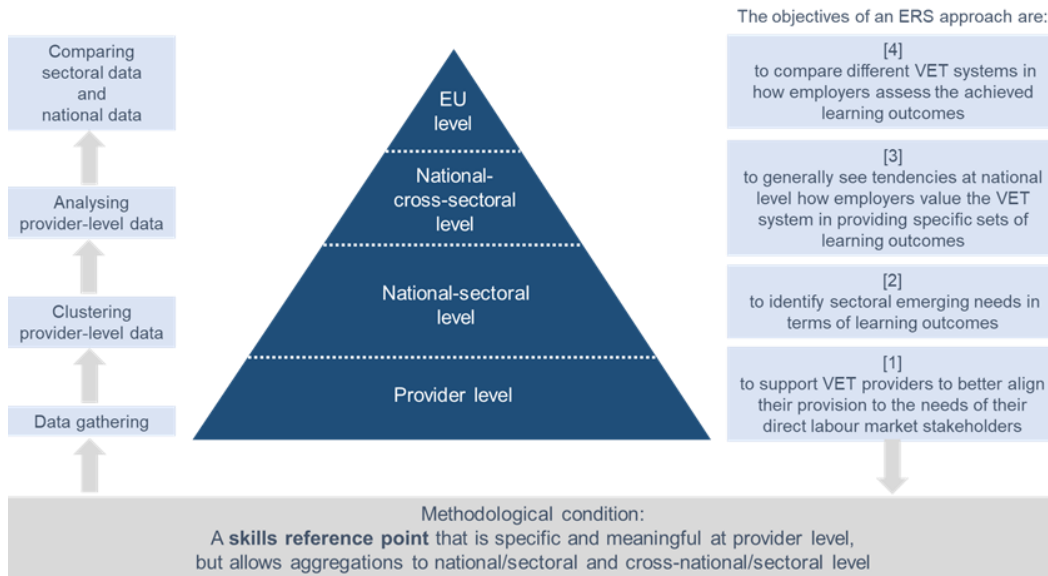
Prototype of a survey for employer reflection on (VET) graduates

In Chapter 4, a specific approach to conducting employer reflection surveys is described and the outcomes of the pre-test are discussed. Before discussing the methodological approach, a general outline of the prototype is provided.

4.1. Prototype general outline

The main objective of the employer reflection survey approach is to support VET providers to match their offers better to the needs of their direct labour market stakeholders. As such, the scope of the ERS approach is institutional, as it is a reflection survey among the direct beneficiaries (graduates and employers) of the VET programmes offered/organised by VET providers. The ERS enables VET providers to engage with graduates and also with their employers to assess their reflection on the learning outcomes offered by the VET provider. At the institutional level, VET providers should be able to select and approach most recent graduates and usually already know the employers of graduates in their region. It is on this level that the ERS provides the most direct added value: it offers VET providers an opportunity to engage more with their beneficiaries (both graduates and employers) and reflect together with them on the outcomes of the programmes offered, also reflecting on the regional labour market they usually serve most. Hence, the ERS prototype is not an accountability tool but rather a tool to initiate dialogue between VET providers and employers (and graduates). However, the data collections should allow aggregation of the data to sectoral, national and cross-national levels. The main objectives of an ERS approach are presented schematically in Figure 10.

Figure 10. Objectives of an ERS approach



Source: Cedefop.

In terms of demarcation, the testing looked at two qualification profiles: one for healthcare assistant and one for ICT service technician. The testing took place in two countries, the Netherlands and Lithuania. The ERS was conducted with graduates and employers with the following characteristics:

(a) VET graduates that:

- had obtained their qualification in the last two years;
- worked at least 16 hours per week in the related occupation;
- had been employed in the current position for at least three months;

(b) employer/supervisor of the VET graduate that:

- had or has employed a graduate from the VET provider.

In order to ensure individual responses are not identifiable and to obtain relevant data, the testing exercise aimed to obtain answers from at least five graduates and five employers for each VET provider and each qualification profile.

4.2. Methodological approach to the pre-test

The workflow of the ERS in the two countries was as follows:

(a) step 1: the VET provider was selected to test the ERS prototype. The approach and content of the questionnaires was discussed with representatives of the VET provider. The VET provider put forward a characterisation of the VET qualification in terms of a learning outcomes

- profile in relation to the reference point for the VET qualification (questionnaire for VET provider);
- (b) step 2: the VET provider sent the link to the graduate questionnaire to the target respondents. In the invitation email, the researchers were also introduced. The researchers also asked the VET providers to send out reminders. Although the VET provider was responsible for inviting the graduates, individual data gathered were not available to the VET provider;
 - (c) step 3: the VET provider compiled a list of employers that potentially hired graduates from the programme and sent the invitation link to participate in the employer survey to these. This survey also included questions on whether the employer consented to being contacted by the researchers to discuss the aggregated results;
 - (d) step 4: the researchers interviewed a number of employers that agreed to be approached when finalising the survey on their experience with the survey (length, level of detail, usefulness).

The questionnaires were provided in the national languages (Lithuanian and Dutch), to increase response rates, and were tailored to the two selected qualification profiles. While the preferred method is to gather the data in digital form, the testing was also able to use paper-based questionnaires, which the researchers could distribute.

The frequency and timing of an ERS depends on the request from VET providers. In a way, the same approach can be taken as in the Selfie methodology (Box 4), under the assumption that – in the future – certain aspects of the workflow can be automated. For the testing of the prototype, a one-off survey was conducted.

Box 4. **Selfie (self-reflection on effective learning by fostering the use of innovative educational technologies)**

Selfie is a free, customisable tool to help schools assess where they stand with learning in the digital age. Selfie anonymously gathers the views of students, teachers and school leaders (and, in the case of work-based learning, also of employers) on how technology is used in the school. This is done through a survey which consists of short statements and questions and a simple one-to-five answer scale. While covering a broad range of topics, it should take around 20 minutes to complete the survey.

The school can, through the online Selfie tool and dashboard, tailor the questionnaire to its needs. There are mandatory questions, optional questions and there is the possibility to add own questions. Through the tool, the school can invite the different stakeholder groups. The input gathered from these groups is generated into a school-specific Selfie report, highlighting the strengths and weaknesses of the school in applying digital tools. This report provides a basis for discussions with the different stakeholder groups on the different viewpoints and what could be improved in the school.

Source: Selfie ⁽⁵⁷⁾.

4.3. A skills typology for an employer reflection survey

The ERS approach, in line with the above, has three questionnaires:

- (a) one questionnaire for VET providers;
- (b) one for graduates;
- (c) one for employers.

In the questionnaires, when focusing on questions related to learning outcomes, it was agreed to use a skills typology that is broad enough – so that it can be used regardless of the sector, occupation or qualification in question – but still allows for respondents to score several specific items for each category included. In the preparation of the testing, the research team explored different approaches to constructing a suitable skills typology to be used. In this, the team looked at international reference points (Section 4.3.1) and existing national skills typologies (Section 4.3.2) before constructing an own tailored skills typology (Sections 4.3.3 and 4.3.4).

4.3.1. Use of international reference points

In search for a suitable reference point, first the reference points as discussed in previous parts of the overall study were considered: ESCO, the occupational

⁽⁵⁷⁾ https://ec.europa.eu/education/schools-go-digital/how-selfie-works_en
https://ec.europa.eu/education/schools-go-digital/about-selfie_en

information network (O*NET), worldskills standards specifications (WSSS), VQTS. These reference points, however, include long lists of skills items, making it hard for graduates and employers to navigate. Further, while it is positive that these reference points are attuned to specific occupations, this is not an advantage for an ERS that is scalable. A suitable reference point for the ERS will have to include broader items that materialise differently for different occupations. Hence, the WA1 reference points were not taken into further consideration to function as the ERS list of learning outcomes. However, there are developments related to further rationalising the knowledge, skills and competences (KSCs) in ESCO which are interesting to consider ⁽⁵⁸⁾. In rationalising the top-level ESCO skills and knowledge categories, a pattern was identified of categories of skills that are oriented towards communication and interaction and that gradually move towards the more instrumental equipment-oriented ones. This resulted in the following top-level classification (Table 12).

Table 12. **Draft ESCO skills and knowledge classification, revised 4 October 2019**

Revised level 1 categories		
New L1 code	New level 1 title	Definition
S1	Communication, collaboration and creativity	Communicating, collaborating, liaising and negotiating with other people, developing solutions to problems, creating plans or specifications for the design of objects and systems, composing text or music, performing to entertain an audience, and imparting information, knowledge and skills, using written, oral, visual or electronic means
S2	Collecting, storing, monitoring, and using information	Conducting studies, investigations and tests; maintaining records; managing, evaluating, processing, analysing and monitoring information and projecting outcomes
S3	Assisting and caring for others	Providing assistance, nurturing, care, service and support to other people, and ensuring compliance with rules, standards, guidelines or laws
S4	Managing people, activities, resources, and organisations	Developing objectives and strategies, organising work activities, allocating and controlling resources and leading, motivating, recruiting and supervising people and teams

⁽⁵⁸⁾ Please note that the ESCO skills pillar has been and will be further developed and improved; this report takes into account the developments and proposals up to October/November 2019.

Revised level 1 categories		
New L1 code	New level 1 title	Definition
S5	Interacting with computers	Using computers and other digital tools to develop, install and maintain ICT software and infrastructure and to browse, search, filter, organise, store, retrieve, and analyse data, to collaborate and communicate with others, to create and edit new content
S6	Handling and moving	Sorting, arranging, moving, transforming, fabricating and cleaning goods and materials by hand or using handheld tools and equipment. Tending plants, crops and animals
S7	Constructing	Building, repairing, installing and finishing interior and exterior structures
S8	Working with machinery and specialised equipment	Controlling, operating and monitoring vehicles, stationary and mobile machinery and precision instrumentation and equipment.

Source: Draft ESCO skills and knowledge classification, revised 4.10.2019, p. 2.

In the context of revising the list of ESCO transversal skills and competences, developments can also be reported. Although still under debate, several considerations point in the direction of clearly separating three levels of skills and competences:

- (a) foundations – personal traits – values and attitudes;
- (b) transversal skills and competences;
- (c) job-related skills and competences.

The transversal skills and competences can be split into six clusters as presented in Box 5. The foundations consist of three clusters.

Box 5. ESCO transversal skills and competences and foundations clustering, as proposed in November 2019

Transversal skills and competences

- A. Thinking skills
 - critical thinking
 - analysis and interpretation
 - creation and conceptualisation
 - reasoning/memory

- B. Personal skills
 - adaptability and coping
 - organisation and execution
 - entrepreneurship and performance

- C. People skills
 - leadership and decision
 - interaction and presentation
 - conflict resolution
 - support and cooperation

- D. Physical and manual skills
 - manual skills for arts, crafts, music, etc.

- E. (Basic) learning skills
 - numeracy
 - literacy
 - languages

- F. (Basic) life skills
 - environmental literacy
 - civic literacy
 - economic literacy
 - health literacy

Foundations – personal traits – values-attitudes

- A. Intelligence
 - creativity
 - strategies
 - intellectual processes

- B. Personality
 - openness
 - conscientiousness
 - extraversion
 - agreeableness
 - emotional stability

- C. Interests
 - artistic
 - social entrepreneurial
 - realistic
 - conventional

Source: Bjornavold et al., 2020.

The prototype development for the ERS took into account the ESCO skills pillar as available at the end of 2019. At the time of drafting this report (end of 2020), the ESCO work on transversal skills and competences saw considerable progress. While it was not possible to consider this progress in the pre-test, it is important to present the further evolved thinking about the transversal skills. The most recent drafts on a structured and consistent terminology on transversal skills and competences suggest the following categories:

- (a) language skills and competences: the skills and competences referred to under this heading relate to technical mastery of a language with respect to the rules and conventions of language usage, such as order, meaning, grammar and expression;
- (b) thinking skills and competences: these allows the individual to deal with abstract cognitive concepts;
- (c) self-management skills and competences: self-management skills allow the individual to reflect on and make best use of his/her own abilities and potential;
- (d) social and communication skills and competences: these skills and competences allow the individual to interact with other people;
- (e) life skills and competences: these allow the individual to deal with the conditions and responsibilities of life in modern society.

In this categorisation, physical and manual skills and competences are left out. Basic skills are not included as a separate category, as this would significantly overlap with, and to some extent confuse, the categories listed above.

4.3.2. Use of existing national skills typologies

The second approach was to use an existing reference point, as identified in actual ERS approaches. Of the studied examples (Australia, Austria, Ireland, Lithuania 1 and 2, the Netherlands and Spain), the typology that seemed most adaptable was the one developed for the Australian ESS (the GAS-E). This skills list is manageable for graduates and employers and the terms are easy for graduates and employers to interpret; it is complete in terms of covering different types of learning outcomes (from transversal to occupation-specific ones); and finally, it is scalable and can be used for a variety of VET qualifications. The Australian list was developed by looking at a wide variety of frameworks that present skills lists related to graduate outcomes, curriculum outcomes, and workplace practice. The Australian qualifications framework took, for instance, inspiration from the four clusters of generic skills:

- (a) fundamental skills;
- (b) people skills;
- (c) thinking skills;

(d) personal skills.

The preparatory analysis on existing frameworks ⁽⁵⁹⁾ concluded that, although different frameworks 'are informed by very different motivations and philosophical underpinnings, there are similarities among the frameworks in terms of the skills (and in some cases attributes) that are identified'. (Oliver et al., 2014, p. 27). Another conclusion was that 'one aspect that none of the frameworks covers well is technical skills and discipline-specific knowledge' (Oliver et al., 2014, p. 27). The final version of the Australian list is firmly based on existing frameworks (in terms of more transversal skills) but with added technical skills and domain-specific knowledge. For the purpose of the prototype ERS, the Australian list can be used as inspiration, while needing some further reflection and finetuning. Below, the categories and respective items included in the Australian list are presented together with some further reflections and suggestions for improvement.

Box 6. Suggestion of a reference point: the Australian list of skills and attributes accompanied with reflections

A. Foundation skills

- (a) oral communication skills
- (b) written communication skills
- (c) working with numbers
- (d) ability to develop relevant knowledge
- (e) ability to develop relevant skills
- (f) ability to solve problems
- (g) ability to integrate knowledge
- (h) ability to think independently about problems

Reflection: What could be added here is the ability to communicate in a foreign language.

B. Adaptive skills and attributes

- (a) broad background knowledge
- (b) ability to develop innovative ideas
- (c) ability to identify new opportunities
- (d) ability to adapt knowledge to different contexts
- (e) ability to apply skills in different contexts
- (f) capacity to work independently

Reflection: These skills and attributes actually point to the vertical dimension (how the complexity of learning increases from [one] level to another). Items (d) and (e) are

⁽⁵⁹⁾ See for an overview of the frameworks and classifications discussed see Appendix A and B in Oliver et al., 2014.

more fitting for EQF level 4 and higher compared to EQF level 2 and 3. The suggestion is to leave it as it is.

C. Teamwork and interpersonal skills

- (a) working well in a team
- (b) getting on well with others in the workplace
- (c) working collaboratively with colleagues to complete tasks
- (d) understanding different points of view
- (e) ability to interact with co-workers from different or multicultural backgrounds

Reflection: no further reflections.

D. Technical and professional skills

- (a) applying professional knowledge to job tasks
- (b) using technology effectively
- (c) applying technical skills in the workplace
- (d) maintaining professional standards
- (e) observing ethical standards
- (f) using research skills to gather evidence

Reflection: This set refers in broad terms to how the graduate is able to carry out occupation-specific work tasks without explicitly defining them in the list: it would mean something completely different in different occupations. There might be a slight overemphasis on technical skills, which would make it less fitting to less technical occupations (for instance in the healthcare sector). A suggestion could be to replace in (c) 'technical skills' with 'occupation-specific skills'. Further, (f) might be more related to higher EQF levels (even above EQF level 4). Finally, specific occupational skills will be added per occupation to make the list better tailored to the occupation.

E. Employability and enterprise skills

- (a) ability to work under pressure
- (b) capacity to be flexible in the workplace
- (c) ability to meet deadlines
- (d) understanding the nature of your business or organisation
- (e) demonstrating leadership skills
- (f) demonstrating management skills
- (g) taking responsibility for personal professional development
- (h) demonstrating initiative in the workplace

Reflection: This set seems to be more appropriate to higher EQF levels. It is suggested to include other employability and enterprise skills, such as ability to follow instructions and to leave out items, such as 'demonstrate leadership skills' or 'demonstrate management skills'. Further, there seems to be an overlap with cluster B (i.e. work independently).

4.3.3. Conceptual basis for the ERS skills reference point

From the discussions on existing reference points, it becomes clear that the ERS skills reference point will have to balance between being as complete and comprehensive as possible (demanding a systematic approach to clustering and categorising skills) while being concise and understandable for employers and graduates to work with.

For this purpose, the ERS designed in this study uses a specifically developed skills reference point that is based on the main lines of reasoning of the ESCO KSC lists and the reference point used in the Australian ESS. The development of the ESS reference point is based on the following starting point: each learning outcome that the VET provider, the graduate and the employer will reflect on can be described as a relationship between the holder of the learning outcome and a particular object (each learning outcome depicts a subject-object relationship):

- (a) the subject is the graduate him/herself. In order to operate the learning outcomes and maintain different relationships with different types of objects, the graduate needs to possess specific qualities (characteristics) that can be described in terms of foundations and attitudes. This can also include the place of the graduate in broader society (for example civic integration, environmental literacy);
- (b) the object is that what is outside of the subject and with what the subject maintains a specific relationship. Objects in this relationship can be other people, society at large, the work organisation, and occupation-related objects. It can also be the graduate him/herself, in terms of the subject reflecting on him/herself as object;
- (c) the relationship between holder (subject) and different objects can be described in terms of a power balance:
 - passive: the object exercises power over the subject;
 - neutral: subject and object work together in a power balance;
 - active: the subject exercises power of the object.

While the 'neutral' allows to list what basis is needed for the relationship between subject and object to function, the 'passive' and 'active' allow to describe how the subject has to deal with the relationship in terms of compliance or changing the situation. This relationship can also be associated with the EQF column of the descriptors table, focusing on responsibility and autonomy (besides the knowledge and skills column). At the lower EQF levels, the autonomy and responsibility is limited, referring to a more passive power balance in which the subject is confronted with a rather well structured context and being instructed. At the higher EQF levels, the autonomy and responsibility is extended, referring to a subject that exercises power over objects, be it persons (supervise/instruct) or

work contexts (for instance to manage and transform work contexts). Hence, the relationship (power balance) provides an indication of the level at which the subject is expected to operate.

In line with the distinction as proposed in the context of ESCO, the ESCO skills cluster 'foundations – personal traits – values and attitudes' is linked to how the subject deals with him/herself and deals with society; the ESCO 'transversal skills and competences' and the 'job-related skills and competences' relate to how the subject deals with other people, the work organisation and the occupation-related objects ⁽⁶⁰⁾. Table 13 brings the two dimensions of 'object' and 'relationship' together and indicates related learning outcomes. This table is used to check whether all possible combinations between relationships and objects are described.

Based on this more theoretical exploration, the following skills reference point was proposed (Box 7). This reference point considers the theoretical background but aims at putting forward a concise reference point that employers and graduates can reflect on in a limited period of time.

⁽⁶⁰⁾ When reflecting on the further developed ESCO conceptualisation by the end of 2020 (Section 4.3.1), a similar orientation can be found, as used for the ERS skills reference point: to structure the skills from the inside (self) to the outside (society, broader value areas and life skills).

Table 13. Describing relationships and objects

		Transversal skills and competences (ESCO)				Job-related skills and competences (ESCO)	
		Graduate him/herself ⁽⁶¹⁾	Other people	Work organisation and work in general	Society	General occupation-related objects	Specific occupation-related objects
Type of object	Type of relationship						
Passive: the object exercises power over the subject	In terms of EQF: reference to lower EQF levels (autonomy and responsibility)	<ul style="list-style-type: none"> Self - consciousness (*) 	<ul style="list-style-type: none"> Being instructed Serve others Attentive listening 	<ul style="list-style-type: none"> Work ethics In time/keep deadlines Respect work processes and procedures Work under pressure Be flexible in the workplace 	<ul style="list-style-type: none"> Ethical behaviour Respect rules Help others in society 	<ul style="list-style-type: none"> Complying with occupation-related (safety) procedures 	<ul style="list-style-type: none"> Dealing with specific procedures, processes and tools
Neutral: subject and object work together in a power balance		<ul style="list-style-type: none"> Health literacy Numeracy Literacy Languages 	<ul style="list-style-type: none"> Teamwork Collaborative work Getting on with others Respect Communication skills Understanding other viewpoints 	<ul style="list-style-type: none"> Understanding the nature of your business or organisation Knowledge about the organisation and line of business 	<ul style="list-style-type: none"> Environmental literacy Economic literacy 	<ul style="list-style-type: none"> Maintaining occupation-related knowledge and understanding 	<ul style="list-style-type: none"> Occupation-specific knowledge
Active: the subject exercises power of the object	In terms of EQF: reference to higher EQF levels (autonomy and responsibility)	<ul style="list-style-type: none"> Adaptability; ability to change perspective Endurance Autonomy Responsibility for own actions 	<ul style="list-style-type: none"> Instruct others Leadership Conflict handling 	<ul style="list-style-type: none"> Sense of initiative/see opportunities/innovation Work independently Problem-solving Management Taking responsibility for personal professional development 	<ul style="list-style-type: none"> Contribute to improving society 	<ul style="list-style-type: none"> Developing new occupation-related knowledge and solutions 	<ul style="list-style-type: none"> Operating specific tools and changing processes, procedures and tools

NB: (*) The object of self-consciousness (the self) exercises power over subject (consciousness) in terms of making known itself.

Source: Cedefop.

⁽⁶¹⁾ In the case of the graduate as object, there is a relationship between the graduate as subject (GS) and the graduate as object (GO). The relationship between GS and GO can again be passive, neutral or active. In the case of a passive relationship, GO is able to change the initial perspective of GS. In the case of a neutral relationship, GS and GO go hand in hand. In case of an active relationship, GS directs the GO. This GS-GO relationship relates to the concept of higher-order volitions as proposed in Frankfurt, 1971.

Box 7. **Proposed reference point**

A. Personal characteristics and foundational skills as exercised in the workplace

Cluster A refers to column 2 of Table 13 and includes skills related to passive use (e.g. self-consciousness); neutral use (e.g. foreign language skills); and active use (e.g. persistence and endurance). This cluster describes basic foundational skills and personal characteristics that a graduate could possess when entering a job:

- (a) oral communication skills;
- (b) written communication skills;
- (c) foreign language skills;
- (d) working with numbers;
- (e) self-reflection and critical thinking;
- (f) self-consciousness and taking responsibility for own actions;
- (g) adaptability and ability of change perspective;
- (h) persistence and endurance.

B. Teamwork and interpersonal skills as exercised in the workplace

Cluster B refers to column 3 of Table 13 and includes skills related to passive use (e.g. ability to follow instructions); neutral use (e.g. working well in teams); and active use (e.g. handling conflicts). This cluster describes how the graduate works in an interpersonal context:

- (a) working well in a team and working collaboratively with colleagues to complete tasks;
- (b) getting on well with others in the workplace and understanding different points of view;
- (c) ability to interact with colleagues from different or multicultural backgrounds;
- (d) ability to follow instructions;
- (e) ability to instruct and/or lead others;
- (f) ability to handle conflicts.

C. Employability and enterprise skills as exercised in the workplace

Cluster C refers to column 4 of Table 13 and includes skills related to passive use (e.g. work ethics, meaning complying with what is considered ethical in the workplace); neutral use (e.g. understanding the nature of the business); and active use (e.g. solving problems). This cluster describes how the graduate works in an organisational context and in the labour market:

- (a) ability to work under pressure;
- (b) comply with work ethics;
- (c) reflect work processes and procedures;
- (d) capacity to be flexible in the workplace;
- (e) ability to meet deadlines;
- (f) understanding the nature of your business or organisation;
- (g) ability to manage processes/projects;
- (h) taking responsibility for personal professional development;

- (i) demonstrating initiative in the workplace and showing sense of initiative;
- (j) ability to solve problems.

D. Societal values as exercised in the workplace (*)

Cluster D refers to column 5 of Table 13 and includes skills related to passive use (to show ethical behaviour) and active use (reflect on own role in society). The skills related to the neutral use (economic/environmental literacy) are not included in this list for the ERS, as these are deemed challenging to reflect on for employers. This cluster describes how the graduate works in a broader societal context:

- (a) show ethical behaviour and comply with rules and regulations;
- (b) critical reflection on own role and place in society

E. General occupation-related skills and competences as exercised in the workplace

Cluster E refers to column 6 of Table 13 and includes skills related to passive use (e.g. observing ethical standards); neutral use (e.g. applying professional knowledge); and active use (e.g. using technology). This cluster describes some general occupation-specific skills and competences which are regarded as skills that can be generically (i.e. occupation-independently) described, while meaning something differently in different occupations (for instance, using technology effectively for an ICT service technician means working with diagnostic ICT equipment; for a health-care assistant, it refers to patients monitoring equipment):

- (a) applying professional knowledge to job tasks;
- (b) using technology effectively;
- (c) applying technical skills in the workplace;
- (d) maintaining professional standards;
- (e) observing ethical standards;
- (f) using research skills to gather evidence.

F. Specific occupation-related skills and competences as exercised in the workplace

Cluster F refers to column 7 of Table 13 and refers mainly to active use. These lists are specific for each occupation and these lists of 10-15 items are based on the learning outcomes mapping conducted in the first part of the overall study (WA1). The ESCO KSCs are selected that:

- (a) are included in many countries (at least eight out of the 10);
- (b) are not already covered in the full list (i.e. they are occupation-specific skills).

This leads to the following two specific occupation-related lists:

- (a) For an ICT service technician:
 - provide technical documentation;
 - perform ICT troubleshooting;
 - use repair manuals;
 - configure ICT system;
 - administer ICT system;
 - maintain ICT server/system;
 - perform backups;
 - repair ICT devices;

- implement ICT recovery system;
 - manage ICT legacy implication;
 - use precision tools.
- (b) For a healthcare assistant:
- monitor basic patient signs;
 - communicate with nursing staff;
 - empathise with the healthcare user;
 - interact with healthcare users;
 - provide basic support to patients;
 - identify abnormalities;
 - support nurses;
 - ensure safety of healthcare users;
 - convey medical routine information;
 - manage healthcare users' data;
 - conduct cleaning tasks.

(*) These could also be integrated under personal characteristics.

Source: Cedefop.

4.3.4. Skills reference point for the ERS pre-test

For presentational reasons, the order of the clusters was changed when presented to employers so that the questionnaires start with questions about the occupation-related skills and end with the personal characteristics. Further, clusters A, C and D are consolidated. Hence, while maintaining the theoretical orientation, the seven clusters as described in Section 4.3.3 are consolidated in four clusters in order not to overcomplicate the skills list to be used in a survey. The order is also changed, starting with the more occupation-related skills and competences and finishing with more transversal skills and competences. It was assumed that this list would be detailed enough to characterise VET programmes; it also includes specific occupation-related skills. At the same time, it is concise enough to be used for an employer survey and to allow cross-programme analysis.

The final list of learning outcomes used in the pre-test is presented in Box 8.

Box 8. **Reference point used for the pre-test of the ERS**

A. General occupation-related skills and competences as exercised in the workplace

This cluster describes some general occupation-specific skills and competences.

- A1: applying professional knowledge to job tasks
- A2: using technology effectively
- A3: applying technical skills in the workplace
- A4: maintaining professional standards
- A5: observing ethical standards
- A6: using research skills to gather evidence

B. Specific occupation-related skills and competences as exercised in the workplace

For an ICT service technician:

- ICT B1: provide technical documentation
- ICT B2: perform ICT troubleshooting
- ICT B3: use repair manuals
- ICT B4: configure ICT system
- ICT B5: administer ICT system
- ICT B6: maintain ICT server/system
- ICT B7: perform backups
- ICT B8: repair ICT devices
- ICT B9: implement ICT recovery system
- ICT B10: manage ICT legacy implication
- ICT B11: use precision tools

For a healthcare assistant:

- HC B1: monitor basic patient signs
- HC B2: communicate with nursing staff
- HC B3: empathise with the healthcare user
- HC B4: interact with healthcare users
- HC B5: provide basic support to patients
- HC B6: identify abnormalities
- HC B7: support nurses
- HC B8: ensure safety of healthcare users
- HC B9: convey medical routine information
- HC B10: manage healthcare users' data
- HC B11: conduct cleaning tasks

C. Teamwork and interpersonal skills as exercised in the workplace

This cluster describes how the graduate works in an interpersonal context.

- C1: working well in a team and working collaboratively with colleagues to complete tasks

C2: getting on well with others in the workplace and understanding different points of view

C3: ability to interact with colleagues from different or multicultural backgrounds

C4: ability to follow instructions

C5: ability to instruct and/or lead others

C6: ability to handle conflicts

D. Employability and enterprise skills as exercised in the workplace

This cluster describes how the graduate works in an organisational context and in the labour market.

D1: ability to work under pressure

D2: reflect work processes and procedures

D3: capacity to be flexible in the workplace

D4: ability to meet deadlines

D5: understanding the nature of your business or organisation

D6: ability to manage processes/projects

D7: taking responsibility for personal professional development (keep up to date)

D8: demonstrating initiative in the workplace and show sense of initiative

D9: ability to solve problems

D10: oral communication skills

D11: written communication skills

D12: foreign language skills

D13: working with numbers

D14: persistence and endurance

D15: critically reflect on own role and place in society

Source: Cedefop.

4.4. Questionnaires for VET providers, graduates and employers/supervisors

To avoid asking for information that is already available, the VET provider, in anonymised form, provided the following information on graduates to the researchers (Section 4.2, workflow step 2):

- (a) VET qualification/VET programme;
- (b) EQF level of the programme.

The VET provider was also asked to provide, through a short questionnaire, a characterisation of the VET qualification, in terms of learning outcome orientation, as well as a rating of the importance of specific learning outcomes for entering a job. In this, the same items are addressed as in the graduate and employers' questionnaire, so that any similarities and discrepancies can be

identified. In Tables 14, 15 and 16, three questionnaires are presented: for VET providers; for graduates; and for employers.

Table 14. **Questionnaire for VET providers**

	Answer category
Introduction	<p>Please provide a short description of the VET qualification in terms of:</p> <ul style="list-style-type: none"> (a) the education level at which the qualification is offered; (b) the (average) duration of the programme leading to the qualification in years or in months; (c) the extent to which learning at the workplace is included in the programme (including an indication of the share of workplace learning); (d) the number of students currently enrolled in the programme leading to the qualification this school year; (e) the number of graduates from the programme leading to the qualification in the last two school years.
Characterisation of the VET qualification by the VET provider and indication of relevance	<p>You are asked to provide a characterisation of the VET qualification and indicate the extent to which the VET programme provided specific skills to the graduate for effectively working in an enterprise.</p> <p>Skills are grouped into four clusters:</p> <ul style="list-style-type: none"> • cluster A: general occupation-related skills and competences as exercised in the workplace • cluster B: specific occupation-related skills and competences as exercised in the workplace • cluster C: teamwork and interpersonal skills as exercised in the workplace • cluster D: employability and enterprise skills as exercised in the workplace <p>Each cluster will be assessed separately.</p> <p>In relation to each skill, to what extent do you believe that the VET programme has provided them to the graduate for effective work in a company/organisation? If the skill is not relevant to the graduate's workplace, you can select 'not applicable'. I believe the VET programme provided this skill (*):</p> <ul style="list-style-type: none"> (a) not at all (b) to some extent (c) to a moderate extent (d) to a large extent (e) to a very large extent (f) not applicable <p>(*) Referring to the reference point (skills typology)</p>
Indication of the proficiency level provided by the VET programme	<p>For each of the skills mentioned under cluster A (general occupation-related skills and competences) and cluster B (specific occupation-related skills and competences), to what extent has the VET programme provided them to the graduate to make him/her ready for work?</p> <p>If the skill is not relevant to the graduate's workplace, you can select 'not applicable'.</p> <p>The VET programme provided the skill at (*):</p> <ul style="list-style-type: none"> (a) the basic level enabling work with intensive supervision, assistance and guidance of more experienced employee (b) the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control (c) a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control (d) not applicable <p>(*) Referring to the reference point (skills typology)</p>
Relevance of the learning outcomes provided by the VET qualification	<p>The next set of questions asks about the skills you think are important for recent graduates to have when starting a related job. From the list of skills (*), please select the five most important and the five least important ones.</p> <p>(*) Referring to the reference point (skills typology)</p>

Source: Cedefop.

Table 15. Questionnaire for VET graduates

	Answer category
Screening	<ul style="list-style-type: none"> • What is your name? • What is your date of birth? (YYYY/MM/DD) • When did you graduate from the VET programme? (month and year) • What is your current employment status? (*) <ul style="list-style-type: none"> (a) employed in a job related to the VET qualification (b) employed in a job unrelated to the VET qualification (c) enrolled in a formal education/training programme (d) unemployed/inactive (e.g. not looking for a job) <p>(*) Routing: only those answering (a) will continue the survey</p>
Current employment	<ul style="list-style-type: none"> • When did you start your current employment? • What is your job title? • Please describe your key work tasks in three sentences or less • Where do you work? <ul style="list-style-type: none"> (a) same city as my VET school (b) same region as my VET school (c) another region than where my VET school is located (d) another country than where my VET school is located
Transition from education and training to employment	<p>Between graduation and starting your current job, what situation(s) apply? Choose one or more of the following situations:</p> <ul style="list-style-type: none"> (a) I worked in another job (or jobs) related to the VET qualification (b) I worked in another job (or jobs) unrelated to the VET qualification (c) I enrolled in a formal education/training programme (d) I was unemployed and searching for a job (e) I was for any reason inactive (e.g. not looking for a job) <p>In case of (b)-(e), how many months were you not in a job related to the VET qualification?</p>
Achieved learning outcomes	<p>In this section we are interested in your assessment of the extent to which the VET programme has prepared you for effective work in your company/organisation.</p> <p>The skills are grouped into four clusters:</p> <ul style="list-style-type: none"> • cluster A: general occupation-related skills and competences as exercised in the workplace • cluster B: specific occupation-related skills and competences as exercised in the workplace • cluster C: teamwork and interpersonal skills as exercised in the workplace • cluster D: employability and enterprise skills as exercised in the workplace <p>Each cluster will be assessed separately.</p> <p>To what extent do you believe that you have acquired the individual skills through the VET programme?</p> <p>If the skill is not required in the job you are doing, you can select 'not applicable'.</p> <p>I believe I have acquired this skill (*):</p> <ul style="list-style-type: none"> (a) not at all (b) to some extent (c) to a moderate extent (d) to a large extent (e) to a very large extent (f) not applicable <p>(*) Referring to the reference point (skills typology)</p>
Relevance of the content of the VET programme for the job	<p>The next set of questions concerns the skills that you think are important for a graduate to have when taking up a related job. Please answer these questions in relation to your current job.</p> <p>From the list of skills (*), please select the five most important and the five least important ones.</p> <p>(*) Referring to the reference point (skills typology)</p>
Satisfaction with overall graduate preparation	<p>Overall, how well did the VET programme prepare you for your current job?</p> <ul style="list-style-type: none"> (a) not at all (b) not well (c) well (d) very well (e) don't know/unsure <p>Please explain your answer.</p>

	Answer category
Consent to be approached	May we contact you for further questions, for additional information/insights on the topics in this survey? (a) no (b) yes, you can contact me via email:

Source: Cedefop.

Table 16. **Questionnaire for employers**

Screening and confirmation	<p>Is there someone working (or that has worked) in your company that recently (in the last two years) graduated from a VET college (in the remaining of the survey we refer to this person as 'the graduate')?</p> <p>(a) yes (b) no</p> <p>Is this VET qualification:</p> <p>(a) a formal requirement for entering the job (required by law) (b) a prerequisite for entering the job (required by the company) (c) a desired qualification for entering the job (preferable, nice to have) (d) not a preferred qualification</p> <p>What is your main occupation/position in the organisation?</p> <p>(a) company owner (b) manager (c) regular employee (d) mentor/in-company trainer (e) HR staff (f) other</p> <p>What is the name of the company/organisation?</p> <p>How big is the company/organisation in terms of the number of employees?</p> <p>Please describe the main line(s) of business of the company/organisation (two to three sentences).</p> <p>What is the geographical focus of the company/organisation (multiple answers possible)? local</p> <p>(a) regional (b) national (c) European (d) international</p>
Achieved skills (learning outcomes)	<p>In this section we are interested in your assessment of the extent to which the VET programme has prepared the graduate for effective work in your company/organisation.</p> <p>Skills are grouped into four clusters:</p> <ul style="list-style-type: none"> • cluster A: general occupation-related skills and competences as exercised in the workplace • cluster B: specific occupation-related skills and competences as exercised in the workplace • cluster C: teamwork and interpersonal skills as exercised in the workplace • cluster D: employability and enterprise skills as exercised in the workplace <p>Each cluster will be assessed separately.</p> <p>In relation to each skill, to what extent do you believe that the VET programme has provided them to the graduate for effective work in your company/organisation? If the skill is not relevant to the graduate's current job, you can select 'not applicable'.</p> <p>I believe the graduate acquired this skill:</p> <p>(a) not at all (b) to some extent (c) to a moderate extent (d) to a large extent (e) to a very large extent (f) not applicable</p>
Indication of the proficiency level provided by the VET programme	<p>For each of the skills mentioned under cluster A (general occupation-related skills and competences) and cluster B (specific occupation-related skills and competences), to what extent has the VET programme provided skills to the graduate to make him/her ready for work? If the skill is not relevant in the graduate's current job, you can select 'not applicable'.</p> <p>The VET programme provided the skill at:</p>

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	<ul style="list-style-type: none"> (a) the basic level, enabling work with intensive supervision, assistance and guidance of more experienced employee (b) the sufficient level, enabling autonomous execution of the work tasks with some supervision and quality control (c) a high level, enabling completely independent execution of tasks by assuming responsibility for quality control (d) not applicable <p>(*) Referring to the reference point (skills typology)</p>
Relevance of the learning outcomes provided by the VET qualification	<p>The next set of questions asks about the skills you think are important for recent graduates to have when starting a related job. From the list of skills (*), please select the five most important and the five least important ones.</p> <p>(*) Referring to the reference point (skills typology)</p>
Overall satisfaction	<p>Overall, how well did the VET programme prepare the graduate for their job?</p> <ul style="list-style-type: none"> (a) not at all (b) not well (c) well (d) very well (e) don't know/unsure <p>Please explain your answer.</p> <p>On the basis of your experience with the graduate you were reflecting on in this survey, how likely is it that you would consider hiring another graduate of this VET programme/with this VET qualification if you had a corresponding vacancy? Would you say this is:</p> <ul style="list-style-type: none"> (a) very unlikely to consider (b) unlikely to consider (c) neither unlikely nor likely to consider (d) likely to consider (e) very likely to consider (f) don't know/unsure <p>Please explain your answer.</p>
Consent to be approached	<p>May we contact you for further questions, for additional information/insights on the topics in this survey?</p> <ul style="list-style-type: none"> (a) no (b) yes, you can contact me via email

Source: Cedefop.

4.5. Pre-test approach and results

4.5.1. Implementation and responses

Initially, the ERS applied a staged approach, where the VET provider sends a questionnaire to the VET graduate to be completed. In this questionnaire, the graduate is asked about the link between the VET programme and his/her occupation and whether the learning outcomes achieved are valuable for the job. It also includes a section on providing contact details of the employer/supervisor who may be asked to complete another questionnaire. It is emphasised that the data are anonymous: they are not used at individual level and are only presented in aggregated form. The employer/supervisor will also receive a questionnaire to reflect on the learning outcomes achieved by the VET graduate and whether these learning outcomes are relevant for the work in the enterprise. From the first test

experience (in February/March 2020), this approach did not seem to work properly, as only a few graduates agreed to provide employer contact details. The questions to provide contact details were probably too confrontational for the graduates and – despite clear statements to the contrary – the graduates may have feared that they would be assessed by their employers. Another reason could have been that graduates did not feel comfortable providing contact details without asking their supervisor first whether they would like to participate in the survey. A final aspect that hampered the approach was the COVID-19 crisis and the associated lockdowns, hampering overall willingness to participate in surveys.

After a pause in the ERS pre-test due to the COVID-19 pandemic, it started up again in September/October 2020 with a slightly different approach. The staged approach was dropped and both graduates and employers were directly approached via the VET providers. The VET providers identified a number of employers who may have recently hired graduates. A question was added asking whether the employer recently hired a graduate from the participating VET provider. While still challenged by the COVID-19 situation and associated restrictions (and increasing workload, for instance, in the healthcare sector), this approach was more successful in reaching graduates and employers. The final data collection took place between September and November 2020. Table 17 provides an overview of the total number of responses for each country, VET provider and qualification.

Table 17. Respondents in the ERS pre-test

MS	VET school	Graduates	Employers
LT	<i>Vilniaus paslaugų verslo profesinio mokymo centras (Vilnius):</i> healthcare assistant	1 complete	1 complete
	<i>Karaliaus Mindaugo profesinio mokymo centras (Kaunas):</i> healthcare assistant	0 complete	0 complete
	<i>Alytaus profesinio mokymo centras (Alytus):</i> healthcare assistant	0 complete	0 complete
	<i>Elektrėnų profesinio mokymo centras (Elektrėnai):</i> ICT technician	0 complete	0 complete
NL	Regional VET centre (ROC) Tilburg: healthcare assistant	7 complete	12 complete
	Horizon college: ICT technician (*)	2 complete: 1 at level 3 1 at level 4	2 complete: 1 at level 3 1 at level 4

NB: (*) completed for the qualifications at level 3 and level 4.

Source: Cedefop.

4.5.2. Results for a single qualification (Netherlands ROC Tilburg: healthcare assistant ⁽⁶²⁾)

The pre-test was conducted in the ROC van Tilburg school for care and wellbeing (*School voor Zorg en Welzijn*) and focused on the healthcare assistant qualification at level 3 (*Verzorgende, IG*). The VET provider facilitated the distribution among graduates of the last two years (2018/19 and 2019/20) and approached a group of employers that regularly hire graduates (or that regularly have apprentices and interns from the VET provider). This resulted in 12 employer responses and seven responses from graduates. The employers ranged from organisations with 150 employees to those with 5 000 employees. They all have a regional focus, providing healthcare services. All employers indicated that the qualification is a formal requirement for entering the job.

Characterisation of the VET programme by the VET provider

Before discussing the assessment from the employers and graduates (closing the feedback loop), first the assessment – or better, characterisation – of the VET programme by the VET provider is presented. Figure 11 indicates the skills which the VET provider finds most and least important (column 2); the level at which the VET provider provided the occupation-specific skills (column 3) and whether the VET provider believes the graduates acquired the skills (column 4).

⁽⁶²⁾ The pre-test only reached the envisaged responses for this VET provider/qualification to allow analyses of the data.

Figure 11. Characterisation of the healthcare assistant level 3 programme by the VET provider (Netherlands)

	Skills and indication of priority (most and least important)	The VET programmes provided the skill at...	Skills are recognised in the graduate (by VET provider) 0: not at all; 4: to a very large extent
Cluster A General occupation-related skills and competences	1. Applying professional knowledge to job tasks	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.43
	2. Using technology effectively	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	3.71
	3. Applying technical skills in the workplace	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.14
	4. Maintaining professional standards	the basic level enabling work with intensive supervision, assistance and guidance of more experienced employee	4.43
	5. Observing ethical standards	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	3.86
	6. Using research skills to gather evidence	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	3.43
ICT cluster B Specific occupation-related skills and competences	1. Provide technical documentation	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	3.67
	2. Perform ICT troubleshooting	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.33
	3. Use repair manuals	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.67
	4. Configure ICT system	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.67
	5. Administer ICT system	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.00
	6. Maintain ICT server/system	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.00
	7. Perform backups	the basic level enabling work with intensive supervision, assistance and guidance of more experienced employee	3.00
	8. Repair ICT devices	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	5.00
	9. Implement ICT recovery system	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	3.67
	10. Manage ICT legacy implication	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	2.67
	11. Use precision tools	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	3.67
HC cluster B Specific occupation-related skills and competences	1. Monitor basic patients' signs	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.75
	2. Communicate with nursing staff	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	5.00
	3. Empathise with the healthcare user	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	4.50
	4. Interact with healthcare users	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	4.75
	5. Provide basic support to patients	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	4.75
	6. Identify abnormalities	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4.00
	7. Support nurses	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	4.75
	8. Ensure safety of healthcare users	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	4.25
	9. Convey medical routine information	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	4.75
	10. Manage healthcare users' data	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	4.25
	11. Conduct cleaning tasks	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	3.25
Cluster C Teamwork and interpersonal skills	1. Working well in a team and working collaboratively with colleagues to complete tasks	NA	4.43
	2. Getting on well with others in the workplace and understanding different points of view	NA	3.86
	3. Ability to interact with co-workers from different or multicultural backgrounds	NA	4.00
	4. Ability to follow instructions	NA	4.43
	5. Ability to instruct and/or lead others	NA	3.57
	6. Ability to handle conflicts	NA	3.57
Cluster D Employability and enterprise skills	1. Ability to work under pressure	NA	3.86
	2. Reflect work processes and procedures	NA	4.14
	3. Capacity to be flexible in the workplace	NA	3.57
	4. Ability to meet deadlines	NA	3.71
	5. Understanding the nature of your business or organisation	NA	3.14
	6. Ability to manage processes/projects	NA	3.43
	7. Taking responsibility for personal professional development (keep up to date)	NA	3.71
	8. Demonstrating initiative in the workplace and show sense of initiative	NA	4.14
	9. Ability to solve problems	NA	4.14
	10. Oral communication skills	NA	3.86
	11. Written communication skills	NA	3.71
	12. Foreign language skills	NA	3.00
	13. Working with numbers	NA	3.29
	14. Persistence and endurance	NA	3.71
	15. Critically reflect on own role and place in society	NA	3.57

Source: Cedefop (pre-test employer reflection survey 2020).

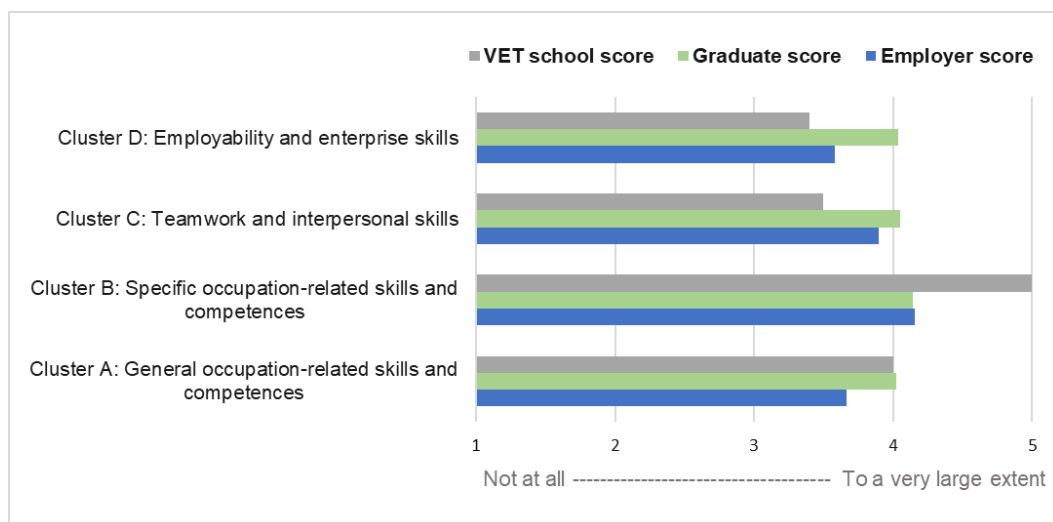
The characterisation shows that those skills that are considered least important are also those that the VET provider does not recognise in the graduates. This applies, for instance, to foreign language learning (D12) (which is not a compulsory part of the programme) or conducting cleaning tasks (B11) (which is not a specific part of the learning outcomes of the qualification). However, those skills that are a priority are not necessarily acquired to a very large extent. For instance, critically reflecting on the own role and place in society (D15) is a priority, but something that could be better developed and more strongly recognised in the graduates.

Feedback loop: reflections from employers and graduates

As a general overall assessment, employers and graduates are positive about whether the VET programme prepared the graduate for his or her job: 83% of employers and 86% of graduates indicated that the programme prepared the graduate well; 17% of the employers and 14% of the graduates even assessed the preparation as very well. Further, 58% of employers considered it very likely that, based on the experience with the graduate they were reflecting on, they would consider hiring another graduate of this VET programme.

A more detailed question related to whether graduates have acquired the skills, and hence to what extent the respondents believe that the VET programme has provided the graduates with the skills for effectively working in a company/organisation. This question was asked of the VET provider (one respondent), the graduates themselves (seven respondents) and the employers (12 respondents). Figure 12 shows the average score per cluster of skills.

Figure 12. **Clusters of skills provided by the VET programme (Netherlands)**



NB: N=20.

Source: Cedefop (pre-test employer reflection survey 2020).

This cluster overview shows that employers and graduates are most positive in recognising specific occupation-related skills and competences and that this is also the case for the VET provider. Employers are of the opinion that the skills in the employability and enterprise skills cluster are the ones least offered.

Figure 13 presents the same data, but specified per individual skill. The skills are not grouped by cluster, but listed in order, from most to least recognised by employers.

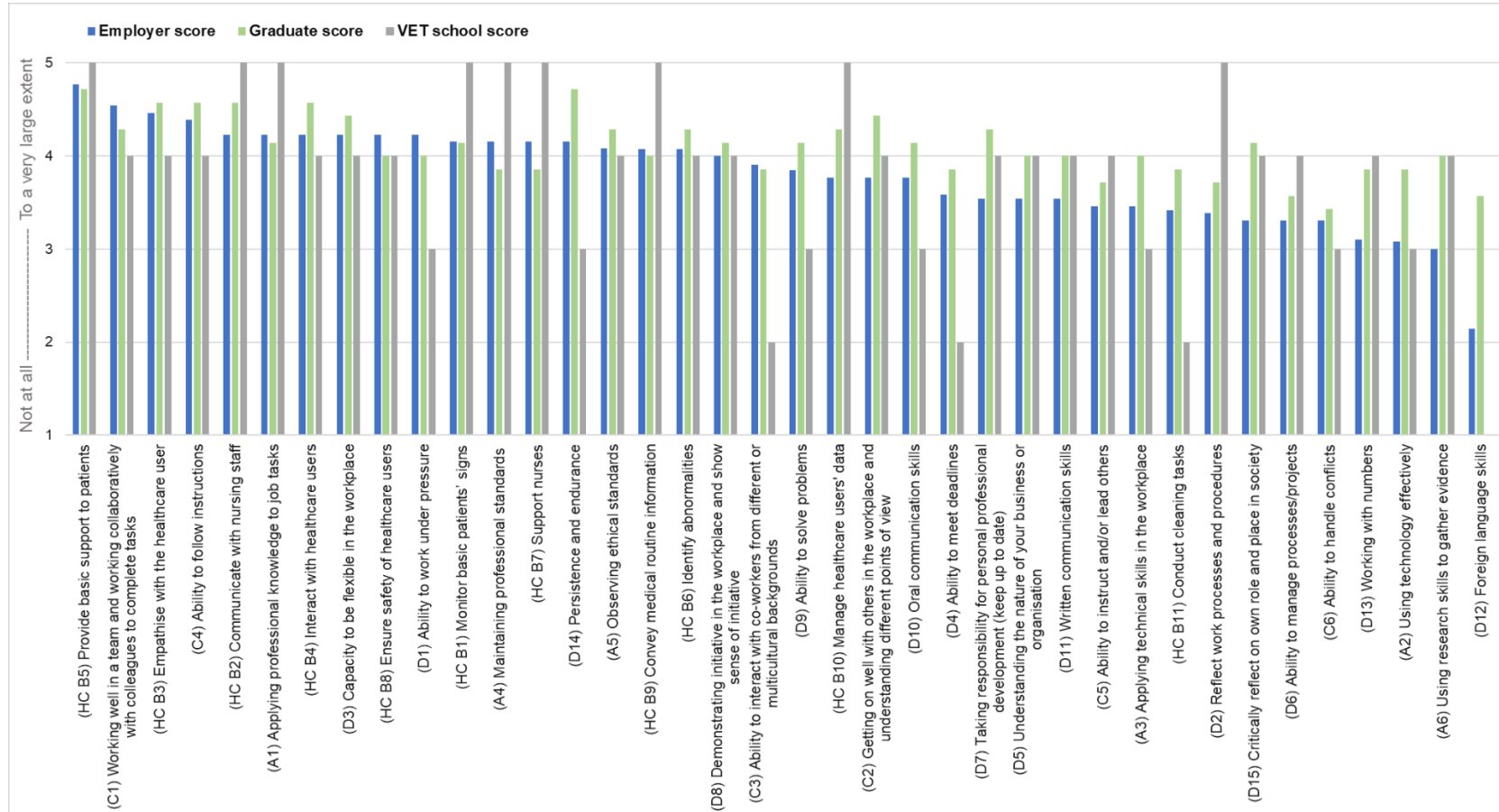
The VET provider and the employers and graduates differ most in their assessment of whether the following skills are acquired by the graduates:

- (a) employers and graduates more positive compared to the VET provider:
 - C3: ability to interact with colleagues from different or multicultural backgrounds;
 - D4: ability to meet deadlines;
 - B11: conduct cleaning tasks;
 - D14: persistence and endurance;
- (b) employers more negative compared to the VET provider:
 - D2: reflect work processes and procedures;
 - B10: manage healthcare users' data;
 - D13: working with numbers;
 - A6: using research skills to gather evidence;
 - B9: convey medical routine information;
- (c) graduates more negative compared to the VET provider:
 - D2: reflect work processes and procedures;
 - A4: maintaining professional standards;
 - B7: support nurses.

It is interesting that, compared to the VET provider, employers and graduates are generally more positive on employability and enterprise skills, such as meeting deadlines and persistence and endurance. This might not be a core competence offered by the VET programme but, in the labour market, these skills are well recognised. On the other hand, more data-related learning outcomes (manage data, work with numbers) are assessed as being less present compared to what the VET provider assumes.

Besides asking whether the graduates actually have obtained the skills, the pre-test survey also asked about which learning outcomes are considered most and least important. Table 18 has the detail.

Figure 13. 'The VET programme has provided the graduates with the skills. I believe the graduate acquired this skill' (Netherlands)



NB: N=20.

Source: Cedefop (pre-test employer reflection survey 2020).

Table 18. **Most and least important learning outcomes (Netherlands healthcare assistant)**

	Most important	Least important
Employers	C1: working well in a team and working collaboratively with colleagues to complete tasks A1: applying professional knowledge to job tasks D7: taking responsibility for personal professional development (keep up to date) B1: monitor basic patient signs B5: provide basic support to patients	D12: foreign language skills D6: ability to manage processes/projects D4: ability to meet deadlines B11: conduct cleaning tasks D13: working with numbers
Graduates	D1: ability to work under pressure A1: applying professional knowledge to job tasks C1: working well in a team and working collaboratively with colleagues to complete tasks D7: taking responsibility for personal professional development (keep up to date)	D12: foreign language skills B11: conduct cleaning tasks A3: applying technical skills in the workplace
VET provider	A1: applying professional knowledge to job tasks A5: observing ethical standards B3: empathise with the healthcare user C1: working well in a team and working collaboratively with colleagues to complete tasks D15: critically reflect on own role and place in society	A2: using technology effectively B11: conduct cleaning tasks D4: ability to meet deadlines D5: understanding the nature of your business or organisation D12: foreign language skills

NB: N=20.

Source: Cedefop (pre-test employer reflection survey 2020).

In terms of most and least important learning outcomes, there are similarities in employer and VET provider responses, but there are also differences. They agree on working in teams (C1), applying professional knowledge (A1); they differ related to taking responsibility for professional development (D7) or empathising with healthcare users (B3) and observing ethical standards (A5). In terms of least important learning outcomes, employers and the VET provider share common ideas, but they also differ. Similarities concern foreign languages (D12), meeting deadlines (D4) and conducting cleaning tasks (B11). They differ with regard managing processes (D6), working with numbers (D13), and understanding the nature of the business (D5).

Graduates and VET providers have similar and diverging views on the most and least important learning outcomes. For the most important learning outcomes, they agree on applying professional knowledge to job tasks (A1) and working well in a team (C1). They differ on, for instance, the ability to work under pressure (D1); observing ethical standards (A5) and critically reflecting on own role and place in society (D15).

To conclude, while there is an overall high level of satisfaction among employers and the graduates concerning the learning outcomes delivered by the VET provider, there are learning outcomes that need further reflection and discussion between employers, graduates and the VET provider in terms of whether they are sufficiently acquired during the programme and/or related to their importance. Examples of learning outcomes that deserve discussion are:

- (a) B10: manage healthcare users' data;
- (b) D2: reflect work processes and procedures.

VET providers have a more positive view of whether graduates obtained these learning outcomes compared to employers and graduates. Further, the ability to work under pressure (D1) is considered a priority by graduates and is assessed as being acquired, but the VET provider is more negative about whether graduates obtained this learning outcome. Apparently, graduates feel that they have obtained more learning outcomes than the VET provider can oversee.

4.5.3. Comparing qualifications: overall analysis results

The data can also be used to provide an overall assessment of what skills are generally recognised in graduates. Based on the limited available data, some provisional analysis can be conducted to provide this overview. At this point, however, it is not possible to make comparisons between countries, to compare the same qualification profiles in the different countries, or to look at different qualification profiles within one country. Once more data becomes available, these possibilities could be tested.

Characterisation of the VET programme by VET providers

Before discussing the assessment from the employers and graduates (closing the feedback loop), first the assessment – or better, characterisation – of the VET programmes by the VET providers is presented. Figure 14 indicates the skills which the VET providers find most and least important (column 2); the level at which the VET provider provided the occupation-specific skills (column 3) and whether the VET providers believe the graduates acquired the skills (column 4).

Figure 14. Characterisation of all programmes together by the VET providers (Lithuania/Netherlands)

	Skills and indication of priority (most and least important)	The VET programme provided the skill at...	Skills are recognised in the graduate (by VET provider) 1: not at all; 5: to a very large extent; 0: not applicable
Cluster A General occupation-related skills and competences	1. Applying professional knowledge to job tasks	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	5
	2. Using technology effectively	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	3
	3. Applying technical skills in the workplace	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	3
	4. Maintaining professional standards	the basic level enabling work with intensive supervision, assistance and guidance of more experienced employee	5
	5. Observing ethical standards	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4
	6. Using research skills to gather evidence	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4
Cluster B Specific occupation-related skills and competences	1. Monitor basic patients' signs	the basic level enabling work with intensive supervision, assistance and guidance of more experienced employee	5
	2. Communicate with nursing staff	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	5
	3. Empathise with the healthcare user	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	4
	4. Interact with healthcare users	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4
	5. Provide basic support to patients	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	5
	6. Identify abnormalities	the basic level enabling work with intensive supervision, assistance and guidance of more experienced employee	4
	7. Support nurses	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	5
	8. Ensure safety of healthcare users	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	4
	9. Convey medical routine information	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	5
	10. Manage healthcare users' data	a high level enabling completely independent execution of tasks by assuming the responsibility of their quality control	5
	11. Conduct cleaning tasks	the sufficient level enabling autonomous execution of the work tasks with some supervision and quality control	2
Cluster C Teamwork and interpersonal skills	1. Working well in a team and working collaboratively with colleagues to complete tasks	NA	4
	2. Getting on well with others in the workplace and understanding different points of view	NA	4
	3. Ability to interact with co-workers from different or multicultural backgrounds	NA	2
	4. Ability to follow instructions	NA	4
	5. Ability to instruct and/or lead others	NA	4
	6. Ability to handle conflicts	NA	3
Cluster D Employability and enterprise skills	1. Ability to work under pressure	NA	3
	2. Reflect work processes and procedures	NA	5
	3. Capacity to be flexible in the workplace	NA	4
	4. Ability to meet deadlines	NA	2
	5. Understanding the nature of your business or organisation	NA	4
	6. Ability to manage processes/projects	NA	4
	7. Taking responsibility for personal professional development (keep up to date)	NA	4
	8. Demonstrating initiative in the workplace and show sense of initiative	NA	4
	9. Ability to solve problems	NA	3
	10. Oral communication skills	NA	3
	11. Written communication skills	NA	4
	12. Foreign language skills	NA	0
	13. Working with numbers	NA	4
	14. Persistence and endurance	NA	3
	15. Critically reflect on own role and place in society	NA	4

Source: Cedefop (pre-test employer reflection survey) 2020.

The characterisation points to a higher priority (column 2) of general occupation-related skills and competences compared to employability skills (such as communication skills, foreign languages and working with numbers). A high level of skills provision (column 3) is mainly indicated for the healthcare assistant qualification occupation-specific skills. In terms of recognising skills (column 4),

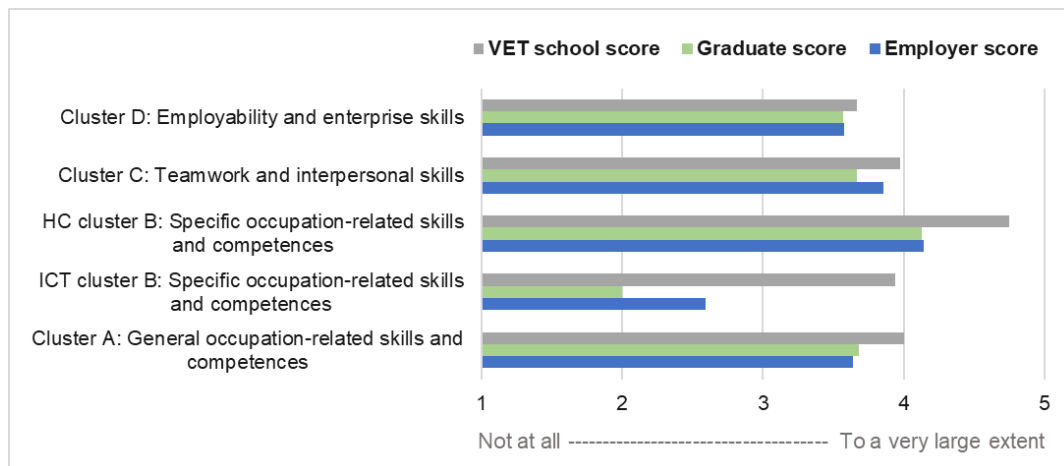
this is also more prominent in cluster A (general occupation-related skills) and cluster B (occupation-specific skills), compared to cluster C (interpersonal skills) and D (employability).

Feedback loop: reflections from employers and graduates

As a general overall assessment, employers and graduates are positive about whether the VET programmes prepared the graduates for their jobs: 79% of employers and 89% of graduates indicated that the programme prepared the graduate 'well'; 21% of the employers and 11% of the graduates even assessed the preparation as 'very well'. Further, 64% of employers regarded it as highly likely that they would consider hiring another graduate from the same VET programme based on the experience with the graduate they were reflecting on.

A more detailed question related to whether graduates have acquired the skills and hence to what extent the respondents believe that the VET programmes have provided the graduates with the skills for effectively working in a company/organisation. This question was asked of the VET provider (seven respondents), the graduates themselves (10 respondents) and the employers (16 respondents). Figure 15 shows the average score per cluster of skills.

Figure 15. **Clusters of skills provided by the VET programmes (both HC and ICT in Lithuania and the Netherlands)**



NB: N=33.

Source: Cedefop (pre-test employer reflection survey 2020).

The analysis shows that there is a large difference between the healthcare and ICT profiles concerning the specific occupation-related skills and competences. The employers and graduates (and also the VET providers) for the healthcare profile are more positive compared to the employers and graduates (and VET providers) for the ICT technician profile.

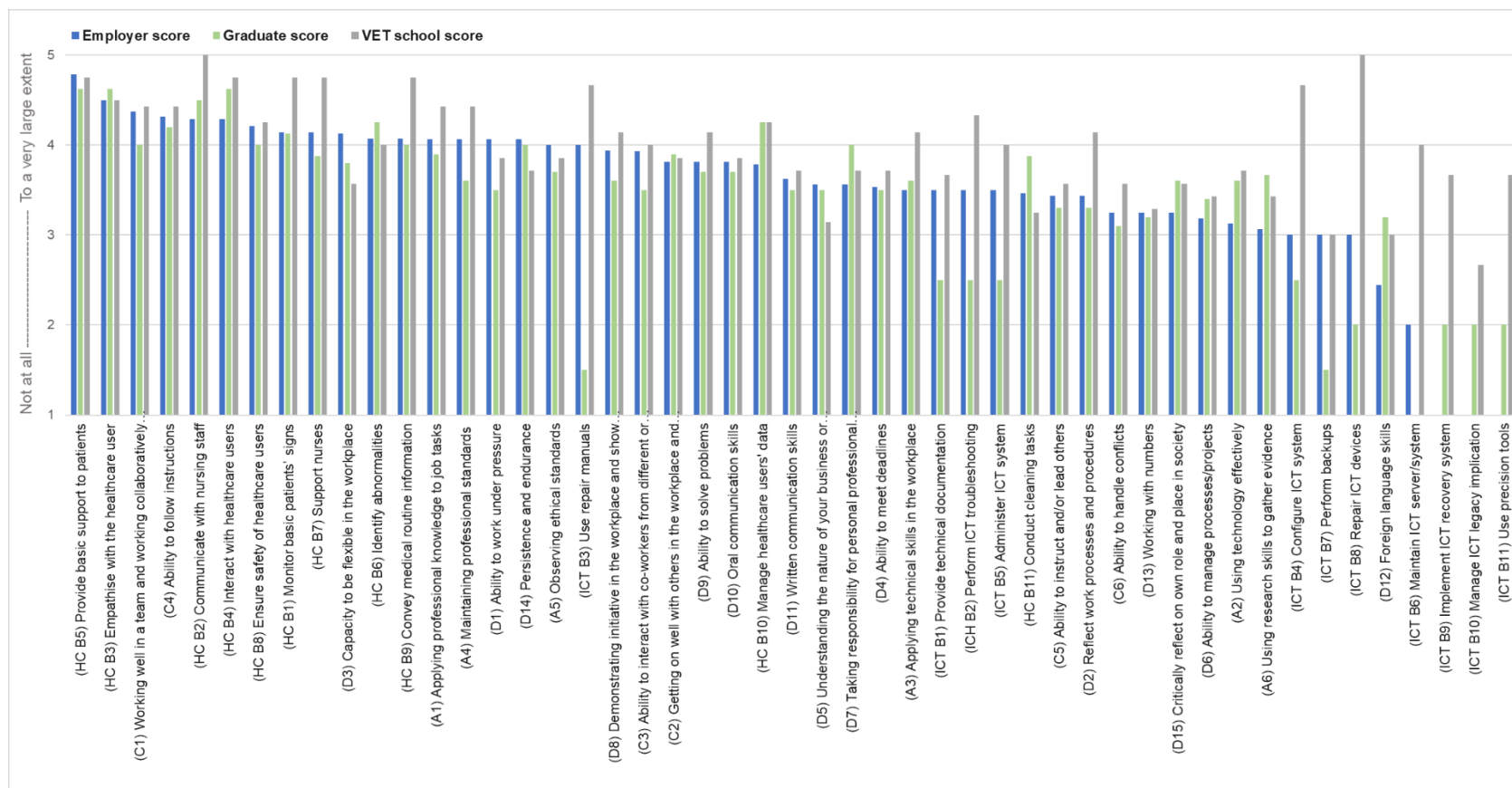
Figure 16 presents the same data, but then specified per individual skill. The skills are not grouped by cluster but listed in order from most to least recognised by employers.

Besides the healthcare-specific skills (HC B5 and HC B3), employers recognise team work (C1) and following instructions (C4) most in the graduates. Flexibility (D3), applying professional knowledge (A1), maintaining professional standards (A4), working under pressure (D1) and persistence and endurance (D14) are also assessed as being present to a large extent. When comparing the healthcare assistant and ICT technician profile, it is noticeable that healthcare assistant skills are generally well recognised, while this is not the case for the ICT technician (see, for instance, ICT B8, B6, B9, B10, B11 all being at the lower end and hence not recognised by the employers in the graduate). This might suggest that the skills list for the ICT technician is not entirely matched to the qualifications assessed and the learning outcomes associated. An indication for this is that the occupation-specific skills in the list are quite technical in the sense that the ICT technicians are supposed to work with computer hardware and work, for instance, with precision tools. In reality, however, these technicians, as trained by the VET providers and employed in the companies, are supposed to work more with software settings. Hence these specific skills seem to be less relevant for the qualifications assessed in the pre-test.

Besides asking whether the graduates actually obtained the skills, the pre-test survey also explored which learning outcomes are considered most and least important. When asked about this, the following picture emerges across the qualification profiles and countries (Table 19).

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Figure 16. 'The VET programme has provided the graduates with the skills. I believe the graduate acquired this skill' (Lithuania/Netherlands)



NB: N=33.

Source: Cedefop (pre-test employer reflection survey) 2020.

Table 19. **Most and least important learning outcomes all qualification profiles and countries**

	Most important	Least important
Employers	A1: applying professional knowledge to job tasks C1: working well in a team and working collaboratively with colleagues to complete tasks D1: ability to work under pressure D7: taking responsibility for personal professional development (keep up to date)	D12: foreign language skills D4: ability to meet deadlines D6: ability to manage processes/projects D13: working with numbers
Graduates	A1: applying professional knowledge to job tasks D1: ability to work under pressure C1: working well in a team and working collaboratively with colleagues to complete tasks D7: taking responsibility for personal professional development (keep up to date)	D12: foreign language skills D13: working with numbers A3: applying technical skills in the workplace A6: using research skills to gather evidence
VET provider	A1: applying professional knowledge to job tasks C1: working well in a team and working collaboratively with colleagues to complete tasks A3: applying technical skills in the workplace A5: observing ethical standards	D5: understanding the nature of your business or organisation D13: working with numbers D15: critically reflect on own role and place in society

NB: N=20.

Source: Cedefop (pre-test employer reflection survey 2020).

In terms of most and least important learning outcomes, there are similarities in the responses of the employers and VET providers, but there are also differences. They agree on working in teams (C1) and applying professional knowledge (A1); they differ on taking responsibility for professional development (D7) or applying technical skills in the workplace (A3) and observing ethical standards (A5). In terms of least important learning outcomes, employers and the VET provider share common ideas, but they also differ. Similarities concern working with numbers (D13). They differ with regard to managing processes (D6); critically reflecting on own role in society (D15) and understanding the nature of the business (D5).

Graduates and VET providers have similar and diverging views on the most and least important learning outcomes. For the most important learning outcomes, they agree on applying professional knowledge to job tasks (A1) and working well in a team (C1). They differ on the ability to work under pressure (D1) and observing ethical standards (A5).

4.6. Emerging issues

The following lessons can be drawn from the pre-test of the employer reflection survey:

- (a) the pre-test faced severe challenges in reaching out to employers and graduates. While the VET providers approached could be convinced to participate rather easily, it was more challenging than expected to have them reach out to employers and graduates. There are several reasons for this:
 - reaching out to graduates required VET providers to have a functioning alumni policy, in which contact details of graduates are kept up to date and that also assured that graduates provided consent in being approached for surveys after obtaining their VET qualification. For some of the VET providers, this information is not readily available: the pre-test had to rely on approaching all students that obtained a certain qualification, not knowing whether they are employed or pursuing further study. This led to a high number of respondents being excluded from the survey after the question on whether they are employed in a job related to the VET qualification;
 - the route from graduates to employers (asking graduates to provide contact details of their supervisors) proved to be a dead end in the pre-test. Apparently, graduates – despite clear explanations – felt that they would be subject to assessment by their supervisors. In the rerun of the pre-test, the approach was changed to contacting employers directly. For this purpose, the research team asked the VET provider to make an inventory of which employers could have hired graduates in the last two years. This did not pose a huge challenge in the healthcare sector where mainly larger organisations hire graduates regularly. In the ICT sector, however, this was more challenging as there are many smaller organisations that only occasionally hire graduates. Also, the sector seems to be more dynamic in terms of job changes; graduates change employers, making it more difficult to keep track of where graduates are employed. Finally, a high number of employers that responded to the survey invitation were excluded, as they did not recently hire graduates from the specific VET programme;
- (b) the questionnaires and the skills lists used in the pre-test seem to be appropriate. The skills lists are detailed enough to allow in-depth reflections on the content of the qualifications, but are short enough (38 items) to be used in a survey without burdening the respondents with tiresome lists of skills. This points to a good balance of complexity and simplicity of the reference point used. The average time for the employers to complete the full survey was 15

- minutes. The structure with the four clusters worked well and allows a maximum of comparisons between different qualification profiles, while also allowing occupation-specific skills to be assessed. The occupation-specific list (cluster B) seemed to work better for the healthcare assistant compared to the ICT technician. The skills listed for the latter were less recognised by VET providers, graduates and employers;
- (c) despite the lack of data, the ERS approach is an interesting and promising approach to closing the feedback loop, looking in detail at the content of qualifications. It allows more direct exchange between VET providers and the employers of graduates on whether what is envisaged in terms of learning outcomes is perceived as being present in the work environment;
 - (d) there is too little data for lessons to be learned about comparing the results for different qualification profiles and between countries. At the time of drafting this report, sufficient data were available only for one VET qualification offered by one VET provider, so no comparison across VET providers, qualification profiles and countries was possible. Also, it was not possible to benchmark one qualification against others. As data collection efforts still continue, the research team hopes to obtain additional data to permit such analyses.

CHAPTER 5.

Conclusions and recommendations

5.1. Conclusions

Based on the analysis so far, and supported by the piloting in Lithuania and the Netherlands, our main conclusions related to a strengthening of the feedback loop between the labour market and VET providers can be summarised as follows.

Conclusion No 1

There are valuable sources for the creation of skills intelligence, but existing methods and tools rarely relate to individual qualifications and usually do not consider actual learning outcomes as they are realised and perceived in the labour market. Moreover, they often focus exclusively on the demand side and do not consider the supply of education and training sufficiently. Thus, they are of limited use for completing the feedback loop.

This study first explored what data is already available in the countries showing the relevance of qualifications for workers, employers and other labour market actors, and particularly the match between the intentions of the VET system and the needs of the labour market. To this end, we examined VET graduate tracking surveys, skill mismatch analyses and the European skills and jobs survey, online vacancy advertisements, including Cedefop's skills-OVATE, forecasting procedures at national level and Cedefop's pan-European skills, as well as employer reflection surveys. Particular emphasis was placed on the extent to which these approaches are useful in completing the feedback loop based on learning outcomes: do they take into account actual or achieved learning outcomes as experienced and monitored by employers?

The analysis of these methods and tools showed that they provide rich insights into the degree of match between skills supply and demand, into current skill demands and future trends, and that they all provide important data for the creation of skills intelligence. However, they are usually not sufficient to close the feedback loop, as they often refer to a higher aggregated level, rather than to individual qualifications, and generally do not relate to the perception of the learning outcomes achieved by graduates and realised on the labour market. VET graduate tracking surveys could be considered, at least in part, as approaches to closing the feedback loop but, in many cases, they focus on more general issues and only in a few on specific learning outcomes. They are concentrated on the graduates and do not consider the employers' perspective or explore whether the

intended learning outcomes are actually achieved. Overall, a bias can be observed, as most of the approaches and tools have a strong or exclusive focus on skills demand on the labour market and do not consider skills supply sufficiently.

Conclusion No 2

Employer reflection surveys have the potential for completing the feedback loop based on learning outcomes but they are usually not conducted in a systematic way at national level. The examples identified show a variety of different approaches and there are several challenges associated with their design. Their usefulness in illustrating the match between the intentions of the VET system and the demands of the labour market seems to be assessed higher in countries with weaker governance and system links between the labour market and the VET system.

Employer reflection surveys, defined as approaches in which employers (or their representatives) are asked to give their reflections on the relevance of qualifications in the labour market, could play an important role in completing the feedback loop, as they can examine whether employers are generally satisfied with the graduates and the learning outcomes they bring to the workplace. In the 10 countries included in this study, we identified surveys that address employer perception of and demand for qualifications and employer reflection surveys without or with reference to learning outcomes included in qualifications. The latter could be seen as the most direct means of monitoring the link between intended and actual or realised learning outcomes.

The study analysed and compared aspects of design and methodology of six examples identified by the national researchers in the European countries covered by this study, as well as one survey from Australia, in order to inform and inspire the development of a prototype to be tested. The characteristics identified include:

- (a) the surveys were most often initiated by government authorities, though they were generally conducted by a secondary partner. In two cases, a non-government authority was the initiator and the same organisation conducted the survey (university of applied science in one case and an employer association in the other). The surveys either focused on a regional or on a national level and targeted employers of graduates, usually without further specifying a demarcation for the target respondents;
- (b) the potential respondents were usually contacted directly, either by email or by telephone, and the surveys were conducted either digitally way or using (semi-structured) interviews;
- (c) in most cases, the questionnaire for the survey did not have a specific focus on learning outcomes, but most used concepts similar or related to learning

outcomes that are based on either an existing or specifically developed typology. Overall, the examples analysed showed a wide variety of ways in which these concepts were included and expressed in the questionnaires, how questions on learning outcomes were formulated and in what form the respondents' answers were expected. In general, a bias towards transversal skills and competences can be observed in the skills lists used.

While employer reflection surveys are actually often used for the review and renewal of qualifications, they are systematically conducted at a national level only to a limited extent. The research found that this is to partly due to the challenges associated with their design, that refer to the heterogeneous content of qualifications, the general difficulties related to the link between VET system and the labour market, and to the methodology of the surveys themselves. While in half of the countries covered by this study, the employer reflection surveys were considered as useful for gaining feedback from the labour market and improving the quality and relevance of VET qualifications, as well as for ensuring the engagement of employers, it was questioned whether such approaches would be useful and desirable in the other half. For example, in countries that already have in place strong links and functioning feedback mechanisms between labour market and the VET system, the introduction of regular employer reflection surveys might even be perceived by employers as an unnecessary administrative burden. In addition, in countries with dual systems (apprenticeships), specific approaches to collecting feedback from employers must be used, since employers are not only recipients of what the education and training system delivers and have a need for a particular skill set, but they are themselves involved in the supply process during in-company training.

Based on the examples analysed and the exploration of the rationale behind the reluctance for conducting national employer reflection surveys, it can be assumed that such surveys provide the most direct added value for VET providers: If they are conducted at this level, they offer the VET providers an additional tool to engage with their graduates and the employers in their region, to initiate a dialogue with them, in order to inform the further development of their offers. The prototype developed for this study, therefore, focused on the provider level.

Conclusion No 3

The list of skills included in the reference point, as developed and used for the pre-test of the ERS, seems appropriate in so far as it allows for reasonable skills assessments, striking a balance between occupation-specific and generic skills, while keeping the total number of skills at a manageable level that allows their application in employer and graduate surveys. In addition, the balancing act of

developing a reference point – based on existing skills sets – while avoiding both oversimplification (with the risk of being potentially meaningless) and over-complexity (with the risk of not being understood by graduates and employers) seems to have been achieved.

A first precondition for a working prototype is to have a reference point with a skill typology that is suitable for an employer survey. It should be able to achieve an appropriate level of detail in the description of learning outcomes, so that employers can reflect on them without presenting a list that is too long and too burdensome for employers to comment on. Taking into account international reference points and national examples of skills typologies, the research team designed a specific list that meets these requirements and also offers the possibility to apply it to different qualifications. The learning outcomes list consists of the following clusters:

- (a) general occupation-related skills and competences as exercised in the workplace: this cluster describes some general occupation-specific skills and competences (total six learning outcomes);
- (b) specific occupation-related skills and competences as exercised in the workplace: this cluster differs per qualification. In the pre-test for healthcare assistant and ICT technician, the list of 11 learning outcomes is based on the learning outcomes mapping conducted in WA1. The ESCO KSCs are selected that are included in many countries (at least eight out of the 10) and that are not already covered in the full list (i.e. they are occupation-specific skills);
- (c) teamwork and interpersonal skills as exercised in the workplace: this cluster describes how the graduate works in an interpersonal context (total six learning outcomes);
- (d) employability and enterprise skills as exercised in the workplace: this cluster describes how the graduate works in an organisational context and in the labour market (total 15 learning outcomes).

In their feedback, employers indicated that the list was detailed enough to reflect on, especially when thinking about a specific graduate that is currently employed. This made it easier to think about whether the specific learning outcome is present for the graduate.

While none of the existing skills lists seemed to be appropriate to be used for the prototype of an ERS, it is still important to build the ERS on existing reference points. Developing each ERS from scratch would probably undermine the use of the tool. Developing and pre-testing the ERS typology revealed lessons that are relevant for the work on the ESCO list of transversal skills and competences. This first relates to the underlying methodology for categorising skills. Both the ERS and the revised ESCO structure for transversal skills (state of play end of 2020) apply

an internal structure that is moving from skills related to the self to skills related to a wider context. From the pre-test, we learned that this leads to skills categories that are understandable and usable in the context of employer and graduate surveys. However, it is still challenging to separate clearly transversal and occupation-specific skills and competences. In the context of the ERS, the objective was to use a skills list that can be applied in different occupations and qualifications to allow comparison between them. Here the tendency is to identify, as much as possible, similarities and overlap in skills and competences and to limit the list of occupation-specific skills. A solution was to introduce general occupation-related skills and competences, which are transversal in the sense that they transcend particular skills ⁽⁶³⁾, and so mean something different in different occupational contexts. These skills are not necessarily transferable between contexts. For ESCO, it could be relevant to explore further this tension between generic and job-specific competences and between transversal and transferable competences. While ESCO differentiates between four reusability levels of ESCO skills concepts (transversal, cross-sectoral, sector-specific and occupation-specific ⁽⁶⁴⁾), this does not thematise the transversality of skills (meaning something differently in different contexts) as described by Winch (2015).

Conclusion No 4

The pre-tested ERS approach is promising, but also challenging, as it requires VET providers to keep track of their graduates (alumni policy) and of the employers of their graduates. This is a challenge especially in sectors with many SMEs.

The VET providers, including those for whom insufficient data was gathered from related employers and graduates, indicated that the approach is useful and evaluated the ERS instrument as positive. The feedback obtained this way was considered as important for the quality assurance of the VET programmes. However, they were much more concerned about the organisational and technical feasibility of surveys of graduates and employers. The ERS approach as used in the pre-test was – given the final response – challenging to implement. The main challenge was reaching out to graduates and their employers. In the first test (in February 2020), the idea was to approach the employers through the graduates (as implemented in the Australian ESS). This created too much of a bottleneck in the current set-up to reach any employers. The graduates did not feel comfortable providing employer contact details: this may have been because they considered this exercise as an individual assessment, or they did not feel comfortable checking

⁽⁶³⁾ See Winch, 2015, p. 170.

⁽⁶⁴⁾ https://ec.europa.eu/esco/portal/escopedia/Skill_reusability_level

with the employer whether it was ok to provide the contact details, or because the corona crisis reduced general willingness to participate in surveys.

Reaching out to graduates and employers requires VET providers to have an active alumni policy. This was in place at the VET providers that acquired a good response rate but was not sufficiently in place at the other VET providers. This made lengthy the process of getting to a point where graduates and employers were addressed and failed to achieve high response rates. In addition, many employers who were approached appeared not to have recruited graduates from these VET providers in recent years.

Establishing contact graduates and employers appeared to be more challenging in the ICT sector than in the healthcare sector. In the ICT sector, there is a less clear idea of who the employers of graduates are, as the sector consists of more SMEs. The labour market is also less regionally limited compared to the healthcare sector, and there appears to be a dynamic in the labour market that is related to the fact that graduates change jobs earlier at the beginning of their careers than healthcare graduates.

Despite these challenges, the ERS pre-test led to interesting results (at least for one qualification) that can be used to support evidence-based dialogue between the VET provider and employers of graduates concerning the content of the qualifications. The employers consulted, after participating in the pre-test, agreed that it makes sense to have this dialogue between employers and VET providers in a direct manner and not just rely on providing input into the lengthy qualification renewal process about what employers would like to see in qualifications. The ERS offers a reality check for the VET providers on whether what they want to offer in the VET qualifications is also perceived – by the employers – as present in the graduates.

The tested ERS approach asked both employers and graduates to reflect on the intended and actual learning outcomes. Closing the feedback loop could be done by only asking employers, but this would not provide the full story; the graduates have their own valid reflections on the VET qualification they have acquired and are rarely asked about the content of the qualification. They are consulted on their general satisfaction with the programmes and the organisation and their progression in the labour market (graduate tracking surveys), but usually not about whether they feel that they acquired the learning outcomes as envisaged by the VET provider.

Conclusion No 5

The tested ERS approach is potentially scalable in terms of using the questionnaire for other qualification profiles, engaging other VET providers and offering different language versions.

The ERS pre-test was conducted in Lithuania and the Netherlands and only covered the healthcare assistance and ICT technician profiles. The questionnaire was made available in English, Dutch and Lithuanian. As the questionnaires are short, and as the questionnaires for VET providers, employers and graduates overlap to a great extent, the effort needed to translate them into other languages is limited. Further, since three of the four parts of the skills list used are generic and only one part (around 11 learning outcomes) is specifically occupation-related, efforts to adapt the skills list to other qualification profiles can also be considered as manageable. It requires taking the ESCO profile, reducing the ESCO list by excluding all those skills that are covered by cluster A, C and D, and then selecting the most relevant 10 to 15 skills to be included in the skills list. In the pre-test, the research team used experiences from the first part of the overall study (work assignment 1) to select the skills that were assessed in different countries as the ones included in at least eight out of 10 national qualification descriptions (i.e. the core profile).

Also, at a technical level, the ERS pre-test is scalable. The survey software allows different routings for different qualification profiles and can include different language versions. The generation of survey links for VET providers, employers and graduates was done manually and would require an automated approach when the ERS approach was to be scaled up. Lessons could be learned from the European Commission's Joint Research Centre Selfie approach⁽⁶⁵⁾, also currently being tested to be used by employers to reflect on the digital readiness of VET schools and associated learning environments.

The main challenge, in terms of scalability, lies with VET providers and their infrastructure of reaching out to their graduates and employers of these graduates. It is not common practice that VET providers have an alumni policy or can easily reach out to employers. Also, capacities are lacking related to linking quality assurance and curriculum development issues to closing the feedback loops and considering reflections from employers and graduates.

5.2. Recommendations

The study leads to the following recommendations.

⁽⁶⁵⁾ https://ec.europa.eu/education/schools-go-digital/how-selfie-works_en

Recommendation No 1

It is recommended to integrate methods to complete the feedback loop more strongly into VET governance and quality assurance procedures and structures. This can also help to complement existing communication structures with evidence. The reflections from employers and graduates, and other labour market stakeholders more generally, provide valuable input into improving the content of the VET qualifications (i.e. the learning outcomes included). It also strengthens the involvement and engagement of labour market stakeholders with VET and their contribution to the design and content of VET qualifications. The reflection could not only focus on the intended and achieved learning outcomes but also consider how the curriculum is realised, through the methods of teaching and learning. Specific reflections are needed: to what extent labour market demand should be considered and VET should be employer driven; how the feedback from the labour market should be assessed and classified; what type of evidence should be considered; and which advice, and from whom, should be considered for the renewal of qualifications. Decisions on this are based on the respective values, beliefs and norms in a VET context and the ideologies expressed should be continuously reflected. The approach for integrating methods to complete the feedback loop more strongly into VET governance and quality assurance arrangements could be further explored and developed within the EQAVET framework in the context of the implementation of the VET recommendation (Council of the European Union, 2020).

Recommendation No 2

It is recommended to combine different sources for completing the feedback loop, as all sources have their specific added value and advantage. Together they shed light on:

- (a) the direct appreciation for specific skills on the labour market (vacancy analysis);
- (b) future demands and desires for skills on the labour market (skills forecasts);
- (c) how holders of qualifications (and their learning outcomes) navigate through the labour market and further education and training (VET graduate tracking initiatives);
- (d) how employers of graduates, the graduates themselves and the training providers assess the existing skills of graduates (employer reflection surveys as developed in this project).

There are several ways to work on completing the feedback loop as discussed in this report. All have their specific approach and added value for gathering information to improve and tailor VET qualifications and to facilitate better links

between the VET sector and labour market stakeholders. Combining approaches can provide added value, since the more quantitative assessments (vacancy analysis and skills forecasts) are more valuable when they are enriched with more qualitative findings from VET graduate- and employer-related methodologies. As some approaches more strongly focus on the demand side, this bias can be avoided by combining them with approaches including the supply side. Also, sectoral skills bodies or professional associations, which may be responsible for or involved in the drafting of qualifications, could be more strongly involved in qualitative approaches, informing the review and renewal of qualifications. The results of a vacancy analysis focusing on the intensity of demand and the most frequently needed skills could be fed into an employer survey to validate the findings and to gain further insights into how the data can be interpreted. Specifically for the skills-OVATE approach, it could be recommended to explore the feasibility of including qualifications and their EQF levels in the data presented at skills-OVATE.

Recommendation No 3

It is recommended not to rely only on national or system-level feedback loops to gather information for the renewal of VET qualifications, but to strengthen more direct feedback loops between VET providers and their (local or regional) labour market stakeholders, so that reflections from the labour market can be taken on board in quality assurance and curriculum renewal more directly. Improvements in VET, also in terms of the content of qualifications, do not only rely on national or system level processes and how learning outcomes are written down in occupational profiles or other reference documents for qualifications. Within these processes and regulations, VET providers and their employers have the opportunity to adapt qualifications based on specific needs and considerations. Employer satisfaction surveys can initiate and contribute to the dialogue between VET providers and employers.

Recommendation No 4

It is recommended to experiment further with the employer reflection survey methodology and try to set up an infrastructure inspired by the Selfie-360 methodology; this measures the digital readiness of schools by asking questions of school leaders, teachers, students and (in work-based learning settings) companies. The ERS, while being severely challenged, shows promising results and insights into the relationship between intended and achieved learning outcomes. Applying a Selfie-360 approach in gathering reflections on the achieved outcomes of VET programmes can:

- (a) stimulate discussions between VET providers and the labour market;

- (b) contribute to skills intelligence (when analysing data at sectoral/national level);
- (c) strengthen involvement of labour market stakeholders in renewal processes and VET governance;
- (d) contribute to international comparison and clarity about the outcomes of national VET qualifications.

The following aspects need to be considered in the continued testing:

- (a) expand to new countries. The ERS is pre-tested in Lithuania and the Netherlands, but it would be beneficial to obtain insights into whether the approach could also work in other VET contexts, such as those with a more dominant school-based VET system (as in eastern Europe countries) or with a more employer-based apprenticeship system (such as Denmark, Germany, Austria). Especially in the latter, it remains to be seen whether an ERS approach would at all add value (as expressed in Section 3.9);
- (b) expand to more VET providers willing to participate and assure buy-in at national level and within economic sectors to test the approach. The pre-test only covered a small number of VET providers. More insight is needed into how the ERS approach works for a larger group of providers, operating in different contexts and with different organisational arrangements concerning employer engagement and alumni policies;
- (c) expand to other qualification profiles besides the healthcare assistant and the ICT technician. The pre-test looked at two carefully selected occupations, but is limited in covering the full scope of VET qualifications. More insights are needed on how the ERS approach works in different occupational contexts. The same questionnaires can be applied (once translated and the specific occupation-related skills are identified and added for the new qualification profiles). Occupation-specific ESCO lists need to be analysed, overlaps with the ERS skills typology needs to be taken out, and a small set of specific occupation-related learning outcomes needs to be selected (based on some form of prioritisation);
- (d) combine the testing of the ERS with support to VET providers to develop policies on employer engagement and alumni policies. The ERS approach primarily aims to support VET providers in their dialogue with employers and graduates on the content of VET programmes. The ERS approach can also be used to stimulate putting in place the necessary conditions for sustainably and operationally running the ERS, such as developing policies on employer engagement and alumni policies;
- (e) combine the ERS outcomes at national or system level with information from other sources closing the feedback loop (vacancy analysis, skills forecasts) and discuss the combined findings with VET providers and employers. The

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ERS is one approach among others: all have their specific added values. Obtaining the best overview of supply and demand of skills relies on combining the different sources. Further, to go beyond obtaining only written descriptions on supply and demand, the overview needs to be used to facilitate continuing dialogue between VET authorities, VET providers, labour market stakeholders (social partners), employers and graduates.

Acronyms

AAGE	Australian Association of Graduate Employers (AU)
AITSL	Australian Institute for Teaching and School Leadership (AU)
ANU	Australian National University (AU)
AQ Austria	Austrian Quality Assurance body for Higher Education (AU)
CATI	computer-assisted telephone interviewing
CBI	Confederation of British Industry (UK-Eng)
CBS	<i>Centraal Bureau voor de Statistiek</i> Central Bureau of Statistics (NL)
CIFCA	<i>centre interprofessionnel de formation des commerces de l'alimentation</i> interprofessional training centre for the food industry (FR)
CNAE	national classification of economic activities (ES)
CNC	computer numerical control
CNCP	<i>catálogo nacional de cualificaciones profesionales</i> national catalogue of professional qualifications (ES)
CSO	Central Statistics Office (IE)
CVET	continuing vocational education and training
DARES	<i>Direction de l'Animation de la Recherche, des Études et des Statistiques</i> statistical service of the French Ministry of Labour (FR)
DG EAC	Directorate-General for Education, Youth, Sport and Culture
DG EMPL	Directorate-General for Employment, Social Affairs and Inclusion
DUAE	directory of local units of economic activity (employer database, ES)
EEA	European Economic Area
EQAVET	European quality assurance in vocational education and training
EQF	European qualifications framework
ERS	employer reflection survey
ESCO	European skills, competences, qualifications and occupations
ESJ	European skills and jobs
ESS	employer satisfaction survey
FET	further education and training (IE)

GAS-E	graduate attributes scale – employer (AU)
GO	graduate as object
GOS	graduate outcomes survey (AU)
GS	graduate as subject
HC	healthcare
HE	higher education
HEA	Higher Education Authority (IE)
HR	human resources
ICT	information and communications technology
ISCED	international standard classification of education
IT	information technology
IVET	initial vocational education and training
KSC	knowledge, skills and competences
LEC	Lithuanian Employers Confederation
LM	labour market
LO	learning outcomes
MBO	<i>middelbaar beroepsonderwijs</i> upper secondary vocational education (NL)
NACE	<i>nomenclature statistique des activités économiques dans la Communauté européenne</i> statistical classification of economic activities in the European Community
NAGCAS	National Association of Graduate Careers Advisory Services (AU)
NAVET	National Agency for Vocational Education and Training (BG)
NES	national employer survey (IE)
NLQF	Netherlands qualifications framework
NQF	national qualifications framework
OCW	Ministry of Education, Culture and Science (NL)
Ofqual	Office of Qualifications and Examinations Regulation (UK-Eng)
OJV	online job vacancy
O*NET	occupational information network (USA)
PES	public employment service
QA	quality assurance
SBB	<i>Stichting Samenwerking Beroepsonderwijs Bedrijfsleven</i> Foundation for Cooperation on Vocational Education, Training and Labour Market (NL)

SCQ	skills, competences and qualifications
Selfie	self-reflection on effective learning by fostering the use of innovative educational technologies
skills-OVATE	skills online vacancy analysis tool for Europe
SME	small and medium-sized enterprise
SOLAS	<i>Ant Seirbhís Oideachais Leanúnaigh agus Scileanna</i> Irish further education and skills service (IE)
SSCs	sector skills councils
UAS	University of Applied Science (AT)
VET	vocational education and training
VQTS	vocational qualifications transfer system
WA	work assignment
WBL	work-based learning
WRC	Workplace Research Centre (AU)
WSSS	worldskills standards specifications

Country codes

AT	Austria
AU	Australia
BG	Bulgaria
DK	Denmark
ES	Spain
FI	Finland
FR	France
IE	Ireland
LT	Lithuania
NL	Netherlands
UK-Eng	UK-England

References

[URLs accessed 10.4.2021]

- Auzinger, M.; Broek, S.; Luomi-Messerer, K. (2017). *The role of learning outcomes in supporting dialogue between the labour market and education and training: the case of vocational education and training*. Final report submitted to Cedefop; 2015-01 29/AO/DSI/JP/Learning outcomes and the labour market/004/15 [unpublished].
- B2U (2016). *Scanning the environment: PESTEL analysis* [website article].
<https://www.business-to-you.com/scanning-the-environment-pestel-analysis/>
- Bjornavold, J. et al. (2020). *Towards a structured and consistent terminology on transversal skills and competences: second draft report to ESCO Member States working group and EQF advisory group*. Brussels.
- Bulgarian Ministry of Labour and Social Policy (2018). *Labour force survey 2.2018*.
<https://www.az.government.bg/pages/prouchvane-potrebnosti-rabotna-sila022018/>
- Cedefop (2009). *The dynamics of qualifications: defining and renewing occupational and educational standards*. Luxembourg: Publications Office. Cedefop Panorama series.
https://www.cedefop.europa.eu/files/5195_en.pdf
- Cedefop (2012). *Skills supply and demand in Europe: methodological framework*. Luxembourg: Publications Office. Cedefop research paper; No 25.
https://www.cedefop.europa.eu/files/5525_en.pdf
- Cedefop (2013). *Renewing VET provision: understanding feedback mechanisms between initial VET and the labour market*. Luxembourg: Publications Office. Cedefop research paper; No 37.
https://www.cedefop.europa.eu/files/5537_en.pdf
- Cedefop (2015). *Skills, qualifications and jobs in the EU: the making of a perfect match? Evidence from Cedefop's European skills and jobs survey*. Luxembourg: Publications Office. Cedefop reference series; No 103.
<http://dx.doi.org/10.2801/606129>
- Cedefop (2017). *Defining, writing and applying learning outcomes: A European handbook*. Luxembourg: Publications Office.
https://www.cedefop.europa.eu/files/4156_en.pdf
- Cedefop (2018). *Insights into skill shortages and skill mismatch: learning from Cedefop's European skills and jobs survey*. Luxembourg: Publications Office. Cedefop reference series; No 106.
<http://data.europa.eu/doi/10.2801/645011>
- Cedefop (2019a). *Crafting skills intelligence: how Cedefop transforms information on skills into powerful evidence for decision-making*.

- <file:///C:/Users/papad/Downloads/Skills%20Panorama%20-%20Crafting%20skills%20intelligence%20-%202019-11-12.pdf>
- Cedefop (2019b). *Online job vacancies and skills analysis: a Cedefop pan-European approach*. Luxembourg: Publications Office.
<http://data.europa.eu/doi/10.2801/097022>
- Cedefop (2020). *Vocational education and training in Europe, 1995-2035: scenarios for European vocational education and training in the 21st century*. Luxembourg: Publications Office. Cedefop reference series; No 114.
https://www.cedefop.europa.eu/files/3083_en.pdf
- Cedefop; Eurofound (2018). *Skills forecast: trends and challenges to 2030*. Luxembourg: Publications Office. Cedefop reference series; No 108.
<http://data.europa.eu/doi/10.2801/4492>
- Chamkhi, A. et al. (2018). Comment les employeurs sélectionnent les candidats qu'ils retiennent dans leur recrutement? [How do employers select the applicants they recruit?]. *Éclairage et synthèses*, Vol. 43.
http://www.pole-emploi.org/files/live/sites/peorg/files/documents/Statistiques-et-analyses/E%26S/ES_43_comment_les_employeurs_selectionent_les_candidats_qu'ils_retiennent_dans_leur_recrutement.pdf
- CIFCA (n.d.). *Audit qualite employeurs 2015-16 [Quality audit employers]*.
https://www.cifca.fr/cifca_images/audit_satisfaction_employeurs_cifca.pdf
https://www.ifopca.fr/ifopca_images/audit_satisfaction_employeurs_ifopca.pdf
- Community of Madrid (2016). *Monitor empleo: necesidades de formación en la Comunidad de Madrid [Employment monitor: training needs in the Community of Madrid]*.
<http://www.comunidad.madrid/publicacion/1354613884579>
- Council of the European Union (2017). Council Recommendation of 20 November 2017 on tracking graduates (text with EEA relevance). *Official Journal of the European Union*, C 423, 9.12.2017.
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017H1209%2801%29>
- Council of the European Union (2020). Council Recommendation of 24 November 2020 on vocational education and training for sustainable competitiveness, social fairness and resilience. *Official Journal of the European Union*, C 417, 2.12.2020.
[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020H1202\(01\)&qid=1607940928823&rom=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020H1202(01)&qid=1607940928823&rom=EN)
- Danish Ministry of Children and Education (2018a). *Puljeoversigt [Group overview]*.
<https://www.uvm.dk/puljer-udbud-og-prisuddelinger/puljer/puljeoversigt>

- Danish Ministry of Children and Education (2018b). *Virksomheds-tilfredshedsmålinger [Business satisfaction measurements]*.
<https://www.uvm.dk/erhvervsuddannelser/skoleudvikling/klare-maal/virksomhedstilfredshedsmaalinger>
- DARES (2017). *Comment les employeurs recrutent-ils leurs salariés? [How do employers recruit their employees?]*. DARES analyses; No 64.
<https://dares.travail-emploi.gouv.fr/sites/default/files/pdf/2017-064-.pdf>
- DfE (2017). *Employer skills survey*. London: HMSO.
- Edge Foundation (2019). Skills shortages in the UK economy. *Edge*, Vol. 4, April 2019.
- Erpenbeck, J.; von Rosenstiel, L. (2003). *Handbuch Kompetenzmessung: Erkennen, verstehen und bewerten von Kompetenzen in der betrieblichen, pädagogischen und psychologischen Praxis [Manual competence measurement: recognising, understanding and evaluating competences in company, educational and psychological practice]*. Stuttgart: Schäffer-Poeschel.
- European Commission (2016). *A new skills agenda for Europe: working together to strengthen human capital, employability and competitiveness*. COM(2016) 381 final.
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0381&from=EN>
- European Commission (2017). *Mapping of VET graduate tracking measures at EU Member States: final report*. Luxembourg: Publications Office.
<https://op.europa.eu/en/publication-detail/-/publication/00d61a86-48fc-11e8-bb7a-01aa75ed71a1/language-en/format-PDF/source-69741501>
- European Commission (2020a). *European skills agenda for sustainable competitiveness, social fairness and resilience*.
<https://ec.europa.eu/social/BlobServlet?docId=22832&langId=en>
- European Commission (2020b). *Mapping the state of graduate tracking policies and practices in the EU Member States and EEA countries: final report*. Luxembourg: Publications Office.
<https://op.europa.eu/en/publication-detail/-/publication/93231582-a66c-11ea-bb7a-01aa75ed71a1/language-en>
- European Parliament; Council of the European Union (2009). Recommendation of the European Parliament and of the Council on the establishment of a European quality assurance reference framework for vocational education and training. *Official Journal of the European Union*, C 155, 8.7.2009.
[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009H0708\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009H0708(01)&from=EN)
- Frankfurt, H.G. (1971). Freedom of the will and the concept of a person. *The Journal of Philosophy*, Vol. 68, No 1, pp. 5-20.
- Lainé, F. (2016). Les compétences attendues par les employeurs et les pratiques de recrutement [Competences expected by employers and recruitment

- practices]. *Éclairage et synthèses*, Vol. 22.
https://www.pole-emploi.org/files/live/sites/peorg/files/documents/Statistiques-et-analyses/E%26S/eets_22_competences_attendues_par_les_employeurs_et_pratiques_de_recrutement10343.pdf
- Latvian Presidency of the Council of the European Union and European Commission. (2015). *Riga conclusions 2015: on a new set of medium-term deliverables in the field of VET for the period 2015-20, as a result of the review of short-term deliverables defined in the 2010 Bruges communiqué*.
https://eu2015.lv/images/notikumi/VET_RigaConclusions_2015.pdf
- LEC (n.d.). *Lietuvos verslo darbdavių konfederacijos atliekamas darbdavių pasitenkinimo profesinio mokymo įstaigų absolventų, dalyvaujančių Erasmus+ mainų programoje kompetencijomis ir kvalifikacijomis tyrimas [Survey of employers' satisfaction on the skills, competences and qualifications of the VET graduates executed by the Business Employers Confederation of Lithuania in implementing Erasmus+ mobility projects since 2016]* [unpublished].
- Lithuanian Centre for the Development of Qualifications and Vocational Training (2018). *Darbdavių pasitenkinimo profesinio mokymo įstaigų absolventų gebėjimais tyrimas, įgyvendinant Europos profesinio mokymo kokybės užtikrinimo nacionalinių orientacinių punktų 2016 m. veiklos programa Nr. 2016 – 0783/001-001, vykdytą Lietuvos Kvalifikacijų ir profesinio mokymo plėtros centro [Employer satisfaction survey on vocational education and training graduates skills and competences]*.
<https://www.kpmc.lt/kpmc/projektai/igyvendinti-projektai/europos-profesinio-mokymo-kokybes-uztikrinimo-nacionaliniu-orientaciniu-punktu-veiklos-programa/>
- Luomi-Messerer, K. (2009). *Using the VQTS model for mobility and permeability: results of the lifelong learning project VQTS II*. Vienna: 3s.
<https://vocationalqualification.net/wp-content/uploads/2018/12/vqtsresult.pdf>
- Markowitsch, J.; Hefler, G. (2018). Staying in the loop: formal feedback mechanisms connecting vocational training to the world of work in Europe. *International Journal for Research in Vocational Education and Training (IJRVET)*, Vol. 5, No 4, December 2018, pp. 285-306.
<https://files.eric.ed.gov/fulltext/EJ1200990.pdf>
- Oliver, D. et al. (2014). *Employer satisfaction survey report for the Department of Education*.
https://www.researchgate.net/publication/272746861_Employer_satisfaction_survey_report_for_the_Department_of_Education
- Pye Tait Consulting (2018). *Perceptions of vocational and technical qualifications: final report: September 2018*.
<https://assets.publishing.service.gov.uk/government/uploads/system/uploads>

[/attachment_data/file/743401/Perceptions_Survey_2018_-_FINAL_-_26_September_2018.pdf](#)

QILT (2019). *2018 employer satisfaction survey: national report.*

https://www.qilt.edu.au/docs/default-source/ess/ess-2018/2018-ess-national-report.pdf?sfvrsn=9d2ae33c_8

SBB (2018). *Meting tevredenheid werkgevers: Aansluiting MBO – arbeidsmarkt [Employer satisfaction measurement: connection of (IVET) MBO – labour market].*

<https://www.s-bb.nl/file/18608/download?token=iAShXkPk>

Social Research Centre (2019). *2018 employer satisfaction survey: methodological report.*

https://www.qilt.edu.au/docs/default-source/ess/ess-2018/2018-ess-methodological-report.pdf?sfvrsn=1c2be33c_2

UAS Carinthia (2014). *Arbeitgeberbefragung der Fachhochschule Kärnten 2014 [Employer survey UAS Carinthia 2014]* [unpublished].

Winch, C. (2015). Towards a framework for professional curriculum design. *Journal of Education and Work*, Vol. 28, No 2, pp. 165-86.

<https://doi.org/10.1080/13639080.2014.1001335>

Further reading

[URLs accessed 10.4.2021]

Buote, V. (2016). Most employees feel authentic at work, but it can take a while. *Harvard Business Review*, 26 May.

https://hbr.org/2016/05/most-employees-feel-authentic-at-work-but-it-can-take-a-while?utm_source=twitter&utm_medium=social&utm_campaign=harvardbiz

Dobrowolski, P. (2019). Österreichs beste Fachhochschulen [The best universities of applied sciences in Austria]. *Industriemagazin*.

Dornmayer, H.; Winkler, B. (2016). Nach der Lehre: Ausbildungs- und Berufserfolg von Lehrabsolventen und Lehrabsolventinnen in Österreich Eine empirische Untersuchung auf Basis von amtlichen Individual-/Registerdaten und persönlicher Befragung [After apprenticeship: training and professional success of apprenticeship graduates in Austria. An empirical study based on official individual/register data and personal interviews]. *Forschungsbericht*, No 186.

<https://www.ibw.at/resource/download/297/ibw-forschungsbericht-186.pdf>

Panopto (2019). *How long should your employee onboarding program be?* Blog post; 4.4.2019.

<https://www.panopto.com/blog/how-long-should-your-employee-onboarding-program-be/>

Phillippi, R.H.; Banta, T.W. (1994). Assessing employer satisfaction: a test of several survey techniques. *Assessment and Evaluation in Higher Education*, Vol. 19, No 2, pp. 123-34.

<https://eric.ed.gov/?id=EJ491321>

UIS (2014). *ISCED fields of education and training 2013 (ISCED-F2013): manual to accompany the international standard classification of education 2011*.

<http://uis.unesco.org/sites/default/files/documents/isced-fields-of-education-and-training-2013-en.pdf>

Further sources of information

[URLs accessed 10.4.2021]

Websites and databases

European Commission

ESCO qualifications

<https://ec.europa.eu/esco/portal/qualification?resetLanguage=true&newLanguage=en#>

Selfie

https://ec.europa.eu/education/schools-go-digital/how-selfie-works_en

Finnish National Agency for Education

<https://www.oph.fi/en>

MyCompetence

National competence assessment network

<http://en.mycompetence.bg/static/2>

Additional documents from the ESCO context

Bjornavold, J. (2019). Improving the ESCO transversal skills and competences.
ESCO Maintenance Committee meeting, Brussels, 12 November 2019.

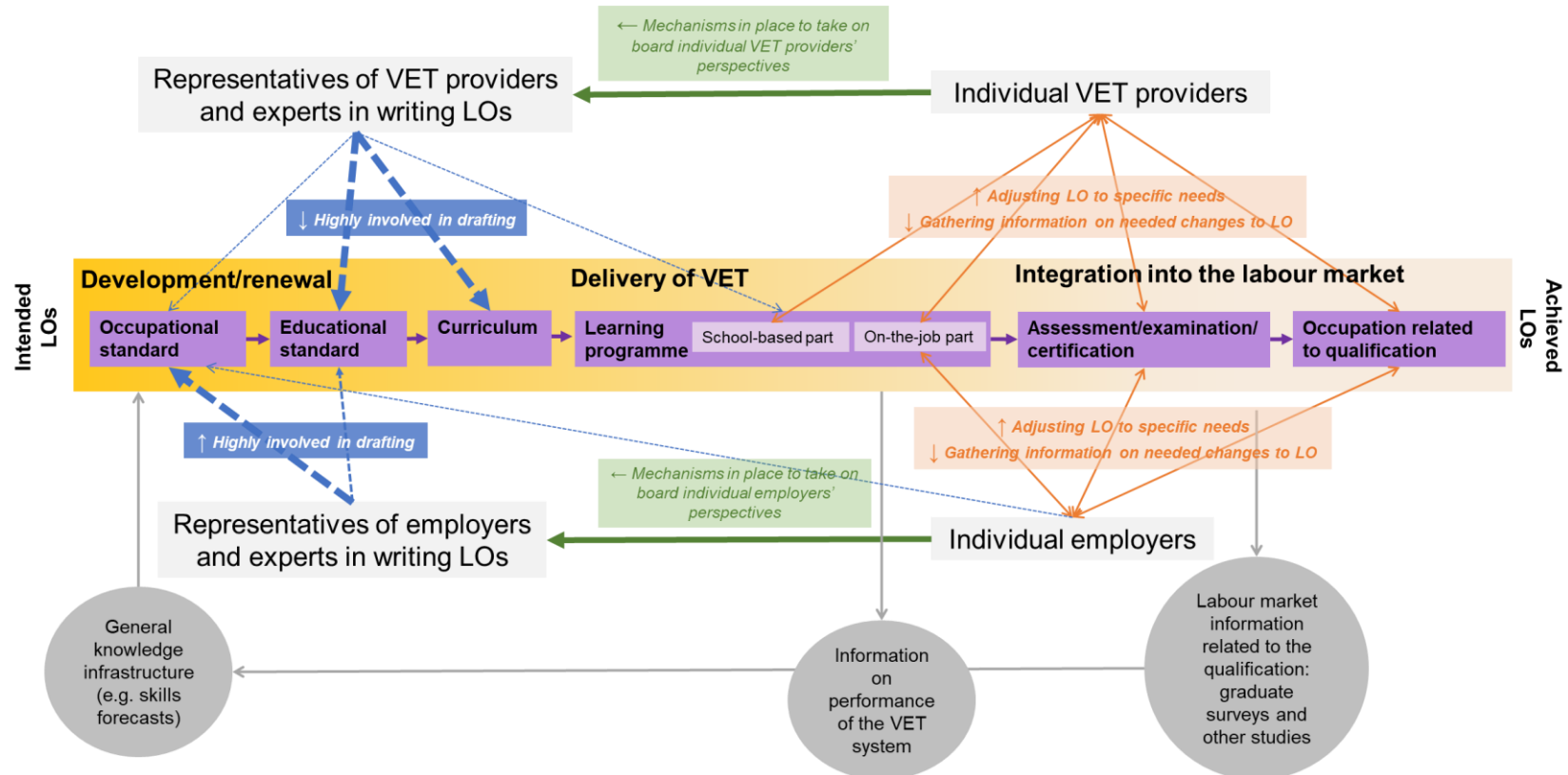
Draft ESCO skills and knowledge classification, revised 4 October 2019.

ANNEXES

ANNEX 1.

Figure on learning outcome feedback loop and continuous dialogue

Figure 17. Schematic overview of the feedback loops related to developing and renewing qualifications



- NB: The yellow box in the middle schematically shows how learning outcomes descriptions 'travel' from the development of occupational standards and educational standards to their realisation by graduates being in the occupation related to the qualification.
- Purple boxes: Use of learning outcomes (LOs) in informing development, delivery and LM integration.
- Exchange/direct feedback (start feedback loop): The orange arrows indicate direct exchanges between VET providers and employers by using learning outcomes descriptions in their dialogue during the training provision, examination and certification processes and the labour market integration of graduates. These concern two-way communication channels: employers and VET providers also learn what might need to be changed in the learning outcomes descriptions as included in the qualification (or occupational standard, educational standard, curriculum).
- Bringing feedback to higher level (intermediate feedback loop): The green arrows show how information on the content of qualifications, the learning outcomes descriptions, is transferred from individual employers and VET providers to representatives and experts who are involved in the development and renewal of the qualifications and the learning outcomes descriptions.
- Capturing feedback in LOs (completing the feedback loop): The blue arrows indicate who is actually involved in the drafting of learning outcomes in the qualifications. Here the feedback loop, from work-practice back to the qualifications is completed.
- Support knowledge infrastructure: the grey circles and arrows show the general knowledge infrastructure on skills. This concerns graduate surveys, skills forecasting, reviews of the VET system, skills modelling, etc.

Source: Auzinger et al., 2017, p. 123.

ANNEX 2.

The research team

Table 20 provides a list of the research team which contributed to the study.

Table 20. **Research team**

Name	Role
Monika Auzinger	Core team
Simon Broek	Team leader WA3 Country expert: Netherlands
Mariya Dzhengozova	Country expert: Bulgaria
Oriol Homs	Country expert: Spain
Marye Hudepohl	Core team
Stefan Humpl	Country expert: Austria
Søren Kristensen	Country expert: Denmark
Jouko Luomi	Country expert: Finland
Karin Luomi-Messerer	Team leader overall FWC Core team
Andrew McCoshan	Country expert: Ireland
Vidmantas Tutlys	Country expert: Lithuania
Patrick Werquin	Country expert: France
Christopher Winch	Country expert: UK-England

Source: Cedefop.



Review and renewal of qualifications

Towards methodologies for analysing
and comparing learning outcomes

This research paper forms part of Cedefop's *Comparing VET qualifications* project, which seeks to develop robust and scalable methods for analysing and comparing the content and profile of qualifications. Focusing on the dialogue (feedback loop) between VET and labour market stakeholders, the paper analyses existing methodologies in this area and outlines how to develop these further.

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