

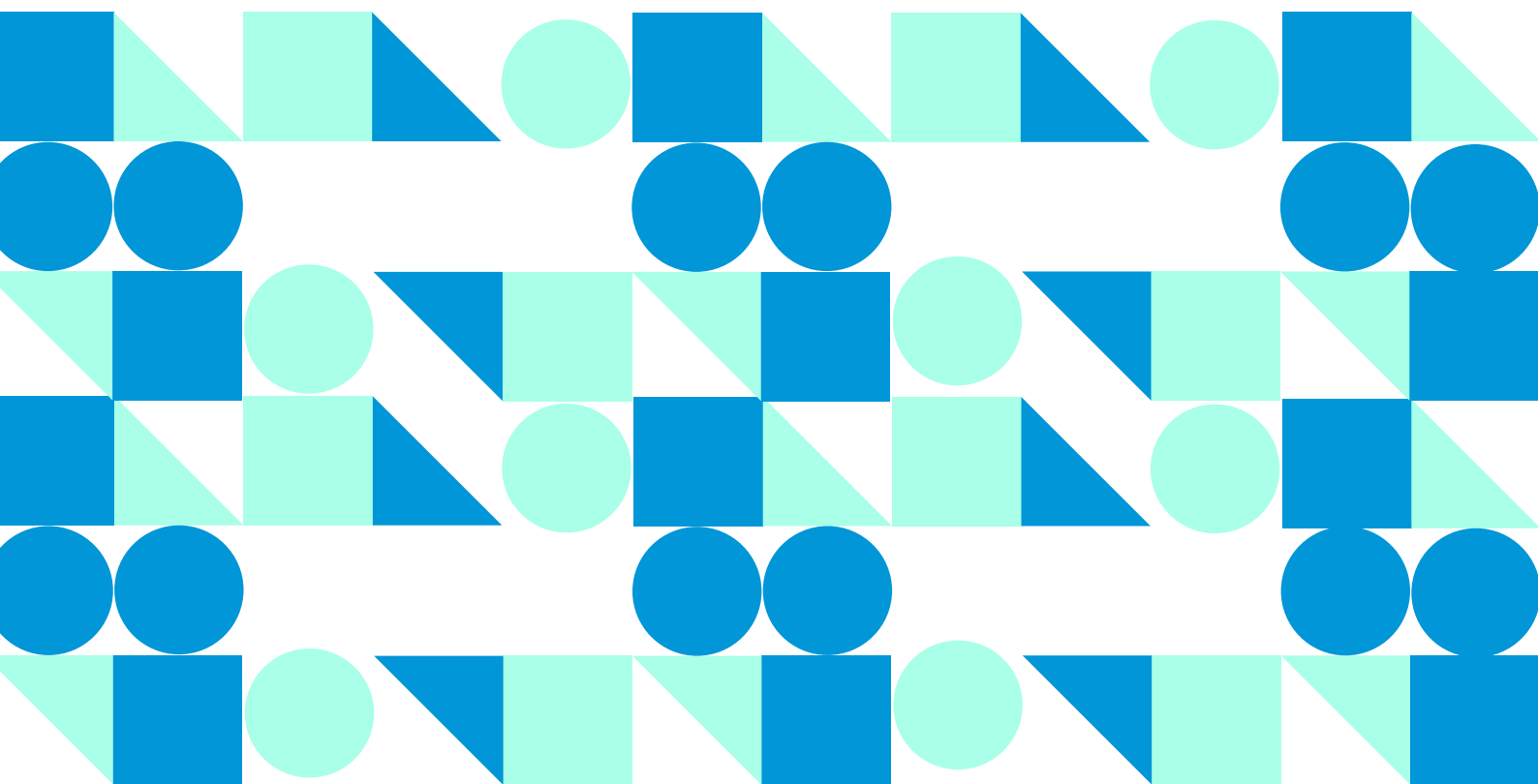


Research paper

# The future of vocational education and training in Europe

Volume 3

The influence of assessments  
on vocational learning







# The future of vocational education and training in Europe

Volume 3

The influence of assessments on  
vocational learning

Please cite this publication as:

Cedefop (2022). *The future of vocational education and training in Europe: volume 3: the influence of assessments on vocational learning*. Luxembourg: Publications Office. Cedefop research paper, No 90. <http://data.europa.eu/doi/10.2801/067378>

---

A great deal of additional information on the European Union is available on the internet.

It can be accessed through the Europa server (<http://europa.eu>).

Luxembourg: Publications Office of the European Union, 2022

© Cedefop, 2022.

Except otherwise noted, the reuse of this document is authorised under a Creative Commons Attribution 4.0 International (CC BY 4.0) licence

(<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes made are indicated. For any use or reproduction of photos or other material that is not owned by Cedefop, permission must be sought directly from the copyright holders.

**PDF** ISBN 978-92-896-3457-1  
ISSN 1831-5860  
doi:10.2801/067378  
TI-BC-22-007-EN-N

**EPUB** ISBN 978-92-896-3458-8  
ISSN 1831-5860  
doi: 10.2801/378203  
TI-BC-22-007-EN-E

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 This decision was repealed in 2019 by Regulation (EU) 2019/128 establishing Cedefop as a Union Agency with a renewed mandate.

Europe 123, Thessaloniki (Pylea), GREECE  
Postal: Cedefop service post, 570 01 Thermi, GREECE  
Tel. +30 2310490111, Fax +30 2310490020  
Email: [info@cedefop.europa.eu](mailto:info@cedefop.europa.eu)  
[www.cedefop.europa.eu](http://www.cedefop.europa.eu)

Jürgen Siebel, *Executive Director*  
Nadine Nerguisian, *Chair of the Management Board*



# Foreword

This report was prepared as part of the Cedefop project *The future of vocational education and training in Europe*. Building on the findings of the previous project (2015-18) on *The changing nature and role of vocational education and training in Europe*, the purpose of the research is to gain an in-depth understanding of future trends in vocational education and training in the 27 Member States of the EU as well as in Iceland, Norway and the United Kingdom. Over a 3-year period 2020-22, the project analyses how VET has changed since the mid-1990s and examines how this influences future opportunities and challenges. The research is divided into five separate but interlinked themes:

- (a) the changing content and profile of VET; epistemological challenges and opportunities;
- (b) delivering IVET; institutional diversification and/or expansion?
- (c) facilitating vocational learning; the influence of assessments;
- (d) delivering lifelong learning; the changing relationship between IVET and CVET;
- (e) European VET; synthesis and trend.

The study builds on the multi-perspective approach developed by the *Changing nature and role of VET* project. An in-depth understanding of VET not only requires a focus on the institutions and systems, it must also analyse the relationship of VET to the labour market and society; and it must systematically seek to understand how the content of VET is changing, and the implications of this on teaching and learning.

This report focuses on the role played by assessment of the delivery of VET. A key question is whether the objectives set in national curricula, by qualifications standards and in programme descriptions, are improved or undermined by dominant assessment approaches. How do assessment approaches address increasingly complex requirements of general knowledge and transversal skills and competences; and can current assessment methodologies be relied on and are they providing a valid picture of achieved learning? The study offers important insights into the evolution of assessment for VET in Europe and can be used as a basis for developing future research in this area.

Jürgen Siebel  
Executive Director

Loukas Zahilas  
Head of Department  
for skills and qualifications

## Acknowledgements

This working paper was produced by Cedefop, department of VET and qualifications, under the supervision of Loukas Zahilas, Head of department. The paper is part of the project *The Future of VET in Europe*, coordinated by Jens Bjørnåvold and supported by Anastasia Pouliou, both Cedefop experts. The research was carried out by a consortium led by 3s Unternehmensberatung GmbH (Austria) and is supervised by Dr. Jörg Markowitsch. The consortium includes Ockham Research (the Netherlands) and the Fondazione Giacomo Brodolino (Italy). The German Federal Institute of Vocational Education and Training (BIBB) supports the project as subcontractor. The report is based on the contributions by Monika Auzinger, Mariya Dzhengozova and Karin Luomi-Messerer (team coordinator).



# Contents

<b>FOREWORD.....</b>	<b>1</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>2</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>7</b>
<b>1. INTRODUCTION .....</b>	<b>12</b>
1.1. Main objectives and research questions .....	12
1.2. Methodology.....	13
<b>2. ASSESSMENT IN IVET: TOWARDS THE ANALYTICAL FRAMEWORK.....</b>	<b>16</b>
2.1. Introduction and overview .....	16
2.2. Main purposes and functions of assessment .....	18
2.3. Scope/focus/content of assessment .....	24
2.4. Basis and criteria for assessment decision-making .....	31
2.5. Assessment methods, tools and context, stakeholder involvement.....	34
2.5.1. Methods and tools used for gathering evidence of learning achievements.....	34
2.5.2. Where assessment is conducted and proximity to the world of work? .....	36
2.5.3. Stakeholders involved: who is assessing?.....	39
2.5.4. Organisation of assessment .....	40
2.6. Alignment of learning outcomes, delivery and assessment .....	43
2.7. Assessment quality and key characteristics.....	46
2.7.1. Key technical characteristics.....	46
2.7.2. Balancing of quality elements .....	49
2.8. Analytical framework: focus on assessment .....	50
<b>3. TRENDS IN ASSESSMENT.....</b>	<b>54</b>
3.1. Introduction .....	54
3.2. Role and function of assessment .....	56
3.2.1. Assessment as part of quality assurance in VET.....	56
3.2.2. Assessment for learning .....	58
3.2.3. Basis for awarding a qualification .....	62
3.2.4. Conclusions .....	64
3.3. Assessment content trends .....	65

3.3.1. Assessment of transversal skills and competences.....	65
3.3.2. Assessment of general subject knowledge.....	72
3.3.3. Validating non-formal and informal learning with a view to obtaining a formal VET qualification .....	73
3.4. Trends in reference points for assessment .....	80
3.5. Trends in assessment methods and context.....	85
3.5.1. Standardised vs individual and flexible assessment approaches .....	85
3.5.2. Collecting evidence related to practical knowledge .....	88
3.5.3. Environment: face-to face versus online.....	92
3.5.4. Location and authenticity .....	96
3.5.5. Assessors .....	99
3.5.6. Organisation of assessment .....	103
3.6. Aligning learning outcomes, delivery mode and assessment.....	109
3.7. Key trends: summary .....	116
3.8. Trends in quality assurance of assessment .....	118
3.9. Impact of COVID-19 on assessment.....	123
<b>4. CONCLUSIONS .....</b>	<b>131</b>
4.1. Reflections on the research questions .....	131
4.1.1. Development of assessment forms over time.....	131
4.1.2. Alignment between assessment specifications and qualifications and programme standards .....	134
4.1.3. Influence of the broadening of the skills and competence base of IVET on assessment .....	135
4.2. Concluding reflections.....	136
4.2.1. Challenges and limitations .....	136
4.2.2. Further research on assessment in VET .....	137
<b>ABBREVIATIONS .....</b>	<b>139</b>
<b>REFERENCES.....</b>	<b>141</b>
<b>ANNEX 1. LINK TO THE PREVIOUS STUDY AND TO OTHER THEMES OF THE <i>FUTURE OF VET</i> STUDY .....</b>	<b>160</b>
<b>ANNEX 2. ASSESSMENT-RELATED QUESTIONS IN RESEARCH TOOLS USED IN THE PREVIOUS PARTS OF THE OVERALL STUDY .....</b>	<b>162</b>
<b>ANNEX 3. LINK BETWEEN RESEARCH QUESTIONS AND DIMENSIONS OF ASSESSMENT .....</b>	<b>166</b>

# Tables, figures and boxes

## Tables

1.	Thematic case studies .....	14
2.	Dimensions and features identified in relation to the purposes and functions of assessment .....	24
3.	Dimensions and features identified in relation to the content of assessment.....	31
4.	Dimensions and features identified in relation to the 'references' for assessment.....	34
5.	Dimensions and features identified in relation to how assessment is conducted .....	42
6.	Features identified in relation to the 'alignment' dimension .....	45
7.	Zooming in on assessment.....	50
8.	Features of 'traditional' assessment and 'practice-oriented assessment' in VET .....	55
9.	Standardised vs individual and flexible assessment approaches .....	88
10.	Summary of key trends related to the dimensions of assessment.....	117
11.	Opposing tendencies in the assessment practice in the Netherlands .....	134

## Figures

1.	The three-perspective model .....	17
2.	Transversal skills and competences in ESCO .....	27
3.	Change in the use of assessment results to monitor the performance of VET institutions .....	57
4.	Changes related to the award of qualifications based on separately assessed modules or units .....	62
5.	Change in the assessment of learners' transversal/soft skills .....	66
6.	Expected change in the inclusion of transversal skills in VET assessment.....	71
7.	Changes related to validating and recognising non-formal and informal learning (e.g. work experience) .....	74
8.	Reference point for assessment leading to the award of a qualification.....	81
9.	Expected future changes in the use of assessment standards based on learning outcomes .....	85
10.	Change in the use of standardised and individualised and flexible assessment approaches.....	87
11.	Changes related to the use of digital assessment or other computer assisted tests .....	93
12.	Changes related to the use of skills demonstrations in real work environments .....	97
13.	Changes related to the involvement of employers or other labour market stakeholders in the assessment of VET learners .....	100
14.	Changes related to the use of self-assessment by VET learners.....	102

15.	Changes related to institution's autonomy to conduct and organise assessment.....	103
16.	Changes related to assessment carried out by external organisations ....	104
17.	Implications of changes in delivery and content of VET over the past 10 years (top four per country) .....	109
18.	Change in the use of individual and tailored learning and individualised and flexible assessment.....	110
19.	Change in the extent of learning at work or on-the-job, and in the use of skills demonstrations in real work environments .....	111
20.	Expected change in the emphasis on transversal skills and their inclusion in assessment.....	112
21.	Relationship of the assessment criteria and learning outcomes defined in VET core curricula in Poland.....	114
22.	Changes to 2019-20 national examinations in upper-secondary education due to the pandemic (% of countries, VET versus general education) .....	124
23.	Areas with the most sustainable change expected due to COVID-19 .....	128

## Boxes

1.	Research questions .....	13
2.	Future of VET survey of vocational education and training providers.....	15
3.	<i>My journey: achieving through different paths: example from Malta.....</i>	59
4.	Assessment guidelines strengthening formative assessment in VET: example from Croatia .....	60
5.	Quality guidelines for assessment in Austrian schools .....	61
6.	Assessing the diploma thesis in secondary schools for economic professions and tourism in Austria.....	68
7.	Assessment of transversal competences in VET in Poland .....	69
8.	Introduction of blocks of competences for supporting flexible career paths and recognition of prior learning in France .....	75
9.	New procedure for the assessment of acquired competences for formal VET qualifications in Lithuania.....	79
10.	Learning outcomes and assessment criteria: example from Poland .....	82
11.	Introduction of generic assessment criteria in Finland in 2022 .....	83
12.	Reference points for assessment in IVET in Estonia.....	84
13.	Final practical assignment in Croatia.....	89
14.	Practical part of the final external examination in VET in Poland .....	90
15.	Projects as part of the final exam in VET in Hungary .....	91
16.	ASCOT+ projects: Germany .....	94
17.	Strengthening standardisation and centralisation of assessment in VET in the Netherlands.....	105
18.	Externalisation and centralisation of assessment in Poland.....	106
19.	National exams for general care nurses in Croatia.....	108
20.	Evolution of assessment in VET in Poland .....	122

# Executive summary

## The study

This report was prepared in the course of the Cedefop project *The future of vocational education and training in Europe*. The main objective of this study is to map and analyse the dominant assessment forms applied in IVET and how these have evolved during the past 25 years. There is a particular focus on exploring the extent to which the objectives set by qualifications, programmes and curricula in terms of content and profile are improved or contradicted by assessment, as well as the extent to which a broadening of the skills and competence base of IVET could influence assessments (responding to increased emphasis on general subjects and greater focus on transversal skills and competences). The study explores to what extent assessment specifications and standards are used to support summative assessments and whether these are aligned with qualifications and programme standards.

### Methodological approach

A multifaceted research design was developed, drawing on information from a range of sources and incorporating findings from earlier research phases of the project:

- (a) literature review to develop the analytical framework for analysing the evolution of assessment and to identify changes and trends in assessment in the countries covered by the overall study (the 27 EU Member States as well as Iceland, Norway and the UK);
- (b) comprehensive data provided by Cedefop's ReferNet network (based on a questionnaire specifically drafted for the purpose of supporting the project);
- (c) eight case studies (covering Czechia, Germany, Finland, Italy, Lithuania, the Netherlands, Norway, UK-England) developed related to Theme 2 of the overall project *Delivering IVET: Institutional diversification and/or expansion?*
- (d) complementary ad hoc research for the remaining 22 countries;
- (e) European VET provider survey, addressing managers, heads or directors of VET provider institutions as well as teachers with at least 10 years of experience;
- (f) seven thematic case studies to examine further specific aspects of change in assessment (covering, Estonia, Croatia, Lithuania, the Netherlands, Austria, Poland, Finland).

### **Analytical framework**

The analytical framework is based on the ‘three-perspective model for VET’, which was introduced in the previous Cedefop study on the *Changing nature and role of vocational education and training (VET) in Europe* and further developed in the current project. This model includes assessment as one of the dimensions of the epistemological and pedagogical perspective. However, a more detailed analysis of assessment approaches requires further differentiation of this dimension; the following key areas were identified based on literature review:

- (a) main purposes and functions of assessment;
- (b) scope/focus/content of assessment;
- (c) reference points and criteria for assessment;
- (d) methods, tools and context of assessment and stakeholders involved;
- (e) link between intended learning outcomes, delivery of programmes/qualifications and assessment standards;
- (f) quality of assessment.

## **Key findings**

The research shows that assessment is being continuously reformed in the countries covered by this study, indicating its essential importance for improving the general quality and value of VET.

### **Development of assessment forms over time**

A greater emphasis on formative assessment can be observed as well as a continuing strong focus on summative assessment approaches: the latter is increasingly being used in some countries to monitor the performance of VET institutions as part of quality assurance in VET. Similarly, research points to an increase in VET learners’ self-assessment, which is more connected to formative than summative assessment. There is a general increase in the number of functions of assessment, which are not mutually exclusive and can be used in parallel. However, the simultaneous attempt to achieve different goals with assessment can also lead to tensions. It is also not always clear to what extent the emphasis on formative assessment approaches and learner-centred pedagogy in general are not just political intentions or lip service, and to what extent they have actually gained ground in practice.

Increased use of assessment of individual units or modules to increase the flexibility of learning pathways (for example, by providing opportunities for validating and recognising non-formal and informal learning) can be observed in some countries. In some cases, a kind of pendulum movement can be observed:

formerly very modularised VET systems become more holistic, while others become more modularised. Similarly, in relation to the use of more standardised assessment approaches or more individual and flexible forms of assessment during recent years, a mixed picture emerges: in some countries, clear trends in one direction or the other can be observed, while in others both trends are present at the same time.

While written examinations remain common in all countries, there is evidence that countries have increasingly adopted different methods of collecting evidence of practical knowledge. For example, many countries have introduced final practical exams or assignments, projects and performance demonstrations. Skills demonstrations are also increasingly carried out in real work environments and employers or other labour market stakeholders are increasingly involved in assessing VET learners. At the same time, a clear trend towards the use of digital assessment or various kinds of computer assisted tests can be observed and new approaches are continuously being developed and piloted. However, because the use of digital technologies in assessment does not yet have a long history, there are still some challenges and caveats associated with it.

The COVID-19 pandemic has generally impacted assessment in a variety of ways, including postponing exams, reducing exam content, using alternative approaches to demonstrate skills (e.g. virtual forms), or adapting the usual assessment approach. In most cases, however, it is more a matter of short-term adaptations than of long-term or permanent changes.

The way assessment has evolved over the years is, to some extent, closely linked to changes in the way qualifications and curricula are described and structured. An important driver of changing or further developing the assessment approach is linked to the key technical characteristics of quality assessment, and particularly to validity and reliability. Reliability and validity cannot easily be achieved simultaneously to the same degree: sometimes a compromise is required or a combination of different forms of assessment is used to satisfy both principles. For example, standardised external written examinations with a high degree of reliability are often introduced to meet the requirements of accountability and to strengthen the value and image of VET. Other forms of assessment are also introduced to ensure the validity of the assessment, including skills demonstrations at the workplace or other assignments close to the workplace. In many countries, phases can be observed in which, in terms of assessment and the associated change processes over the years, sometimes one principle is pursued more strongly, sometimes another. It is also necessary to point out that these developments often do not occur in a clear step-by-step approach or in a linear

process. In some cases, it is a matter of striving for an improved approach that is repeatedly modified; there might also be opposing trends at the same time.

### **Alignment between assessment specifications and qualifications and programme standards**

There is evidence that assessment specifications that specify the criteria underpinning assessments, are increasingly being used. This approach has been strengthened by the shift to learning outcomes for describing qualifications and programmes and curricula. Some coherence can be observed between intended learning outcomes, delivery and assessment. Countries often make considerable efforts to achieve this alignment, e.g. by mapping assessment content to learning outcomes and assessment criteria. They also discuss the appropriate level of detail in the description of learning outcomes and assessment criteria and sometimes change their approach towards one direction or another. Another aspect discussed in relation to assessment and addressed in reforms is the scope for interpretation and the possibility of adapting learning outcomes and assessment criteria to specific target groups, such as students with special needs. This is often related to the pursuit of fairness.

### **Influence of the broadening of the skills and competence base of IVET on assessment**

In assessment of general subjects, the changes made indicate a tendency towards externalisation and standardisation of examinations. This approach is also often related to the pursuit of reliability and associated with the fact that these exams are required to be admitted to higher education.

The research conducted in this study indicates an increase in the assessment of learners' transversal skills. However, this increase appears to be more related to formative assessment, which is conducted internally at the VET provider level, and less to summative or externally conducted assessment. This might be due to the many challenges that are associated with the assessment of transversal competences.

## **Concluding reflections**

### **Challenges and limitations**

Several challenges and limitations were identified during the research and analysis process; they relate to the following aspects:

- (a) the distinction between the rhetoric and opinions on assessment and what really happens on the ground, on the one hand, and between short-term



- trends (e.g. based on reactions to the COVID-19 pandemic) and long-term developments on the other; for the former, it is difficult to say to what extent and how what is written in strategies and policy documents is actually implemented in practice;
- (b) the presumably varying interpretations of terms and concepts by respondents to the VET provider survey;
  - (c) the identification of actual changes related to formative assessment: changes related to summative final exams – such as the introduction of workplace assessments or standardised national/external assessment procedures – are generally easier to capture because they are more regulated and usually anchored in law);
  - (d) the fact that the analytical framework applies some artificial separation and differentiation of dimensions relevant to the shaping of assessment in IVET, some of which refer to dichotomous characteristics (extremes of a spectrum) while others do not;
  - (e) the fact that some of the dimensions and features included in the analytical framework are closely interrelated and, in some cases, the full picture only becomes apparent when looking at the combination of specific dimensions and variants.

### **Possible further research on assessment in VET**

Further research could address improving the analytical framework, taking into account the limitations mentioned above, as well as additional theoretical and empirical findings. It could also be explored how this model can be adapted for other purposes and use cases.

The research approach used in this study remained at a high level of abstraction (necessary to trace the development over the past 25 years across 30 countries) and was therefore not designed for gaining deeper insights into what was or is actually happening on the ground. A closer look into assessment practices or to understand better the impact of assessment on the teaching and learning approach, would require other research methods, such as observations or video analysis of assessments and interviews, focus groups and reflections with examiners and assessed learners.

Another question that could be addressed in follow-up studies is that of the rationale behind decisions regarding assessment design and related reforms. The decision on an assessment approach is based on values and norms and these underlying aspects could need to be explored in more detail.

## CHAPTER 1.

# Introduction

This report was prepared in the course of the Cedefop project *The future of vocational education and training in Europe* which is expected to contribute to better overall understanding of the challenges and opportunities facing European VET in the coming years. This project builds on the previous Cedefop study on *The changing nature and role of VET in Europe* and consists of five work assignments, each focusing on a specific theme:

- (a) Theme 1: Changing content and profile of VET: epistemological challenges and opportunities (Cedefop, 2022b; 2022, forthcoming-d);
- (b) Theme 2: Delivering IVET: Institutional diversification and/or expansion (Cedefop, 2022, forthcoming-a; b);
- (c) Theme 3: Facilitating vocational learning: the influence of assessments (this report);
- (d) Theme 4: Delivering lifelong learning: the changing relationship between IVET and CVET (Cedefop, 2022, forthcoming-c);
- (e) Theme 5: Synthesis and trends.

This report focuses on Theme 3, on assessment in initial vocational education and training (IVET). In this introductory chapter, the objectives and research questions of this part of the overall study and the methodology are presented <sup>(1)</sup>.

The report is further structured as follows:

- (a) Chapter 2 details the key features of assessment and presents the analytical framework;
- (b) Chapter 3 is dedicated to illustrating and discussing trends in assessment, using the dimensions and features identified in the analytical framework;
- (c) Chapter 4 presents conclusions on the research questions as well as challenges and limitations of the research conducted and points to further research needs.

### 1.1. Main objectives and research questions

The main objective of this study is to map and analyse the dominant assessment forms applied in IVET and how have these evolved during the past 25 years. A particular focus is on exploring the extent to which the objectives set by

---

<sup>(1)</sup> The link between this study and the other themes is briefly presented in Annex 1.

qualifications, programmes and curricula, in terms of content and profile, are supported by assessment and the extent to which assessment is influenced by changes in this area. The key research questions include:

**Box 1. Research questions**

1. Which are the dominant assessment forms applied in IVET and how have these evolved over time?
2. To what extent are assessments specifications and standards used to support summative assessments?
3. To what extent are assessment specifications aligned with qualifications and programme standards?
4. To what extent could a broadening of the skills and competence base of IVET influence assessments
  - given increased emphasis on general subjects?
  - given greater focus on transversal skills and competences?

*Source: Cedefop*

## 1.2. Methodology

The study used a variety of different methods to address the key research questions and to collect evidence for the analysis of changes in relation to assessment in IVET.

As a first step, a literature review was conducted to develop further the analytical framework (see Cedefop, 2022, forthcoming-d) with a specific focus on assessment, to draft questions relevant for analysing the evolution of assessment during the past two decades, and to identify relevant case studies. The literature review was also used for identifying changes and trends in assessment in the countries covered by the overall study (the 27 EU Member States as well as Iceland, Norway and the UK).

This study uses results of previous research of the project, in particular:

- (a) comprehensive data provided by Cedefop's ReferNet network (based on a questionnaire specifically drafted for the purpose of supporting the project);
- (b) eight in-depth case studies <sup>(2)</sup>;
- (c) complementary ad hoc research for the remaining 22 countries;

---

<sup>(2)</sup> The following countries were covered through in-depth case studies: Czechia, Finland, Germany, Italy, Lithuania, the Netherlands, Norway, UK-England.

- (d) European VET provider survey, addressing managers, heads or directors of VET provider institutions as well as teachers with at least 10 years of experience (Box 2).

The main source of information alongside the literature review, was seven thematic case studies that were conducted based on desk research and interviews with relevant key stakeholders to further examine specific aspects of change in assessment. They each have a common part and a part focusing on the specific topic. The common part focused on the first research question ('Which are the dominant assessment forms applied in IVET and how have these evolved over time?'). The individual part of each case study consisted of an in-depth analysis of a specific topic: individual phenomena were analysed, in the sense of paradigmatic examples. Thus, the case studies were used to illustrate and further explore change processes in relation to specific features of assessment and their combination. The main drivers influencing the specific changes in assessment were explored, as well as any changes expected in the future. Also, the impact of the COVID-19 pandemic on assessment approaches, the adjustments made (e.g. in assessment procedures, locations, tools) and possible long-term changes (some changes could possibly have been introduced merely temporarily, while others could be maintained permanently) were addressed. An overview of the thematic case studies is presented in Table 1.

Table 1. **Thematic case studies**

Country	Title
Croatia	Externalisation and standardisation of assessment in Croatian VET
Estonia	Evolution of the assessment approach in the context of the reform of the Estonian VET system
Finland	The evolution of assessment in VET in Finland in light of the enhanced competence-based approach
Lithuania	Increasing opportunities for validating non-formal and informal learning with a view to obtaining a formal VET qualification in Lithuania
The Netherlands	Assessment in the real occupational context in the Netherlands: balancing nationally defined learning outcomes and quality criteria with VET institutional autonomy and diversity in assessment contexts
Austria	Increased focus on the assessment of transversal competences in the Austrian school-based VET system (with a particular focus on colleges for higher vocational education)
Poland	Increased focus on standardised assessment in Poland

Source: Cedefop.

**Box 2. Future of VET survey of vocational education and training providers**

The purpose of the VET provider online survey was to obtain information about how the content and means of delivering IVET has changed over the past 10 years. It was carried out between June and October 2021 and addressed VET providers in Europe at upper secondary level, typically providing IVET at EQF levels 3 and 4. Managers and heads of VET institutions, as well as experienced teachers, were the key target group.

Although the survey is not representative of the population of providers, we tried to obtain responses from VET providers who are, in some ways, regarded as typical because they represent a relatively common type of IVET provider in the respective country. The survey was distributed both through international networks and organisations (e.g. Cedefop's ReferNet) as well as via national experts in selected countries. The questionnaire has been translated into the national language of the focus countries (English and nine other languages).

This report mainly presents results for 11 countries for which the sample is sufficiently large to come to reasonably robust conclusions (n = 893): Austria, Croatia, Finland, France, Italy, the Netherlands, Poland, Romania, Slovenia, Spain, and the United Kingdom.

More details on the survey are provided in a separate report (Cedefop, 2022, forthcoming-b).

*Source:* Cedefop.

## CHAPTER 2.

# Assessment in IVET: towards the analytical framework

### 2.1. Introduction and overview <sup>(3)</sup>

For the purpose of this study, we use the following general definition of assessment: ‘Assessment is understood as the process of establishing the extent to which a learner has attained particular knowledge, skills and competences against criteria such as learning outcomes or standards of competence’ (Cedefop, 2015a, p. 21). Assessment processes include the collection of evidence of, and allow judgements on, an individual’s progress and achievement of learning goals; assessment criteria provide a reference point for this. However, it has to be noted that there are limitations to assessment, particularly related to VET: ‘Assessment can never completely verify a candidate’s ability to work as a professional. This would only be possible if assessment referred to a long-term work period carried out by the applicant under real work conditions, and this would imply an anticipation of professional life that, in practical terms, cannot be provided. Considered under this aspect, assessment is always imperfect’ (Psifidou, 2014, pp. 143-144).

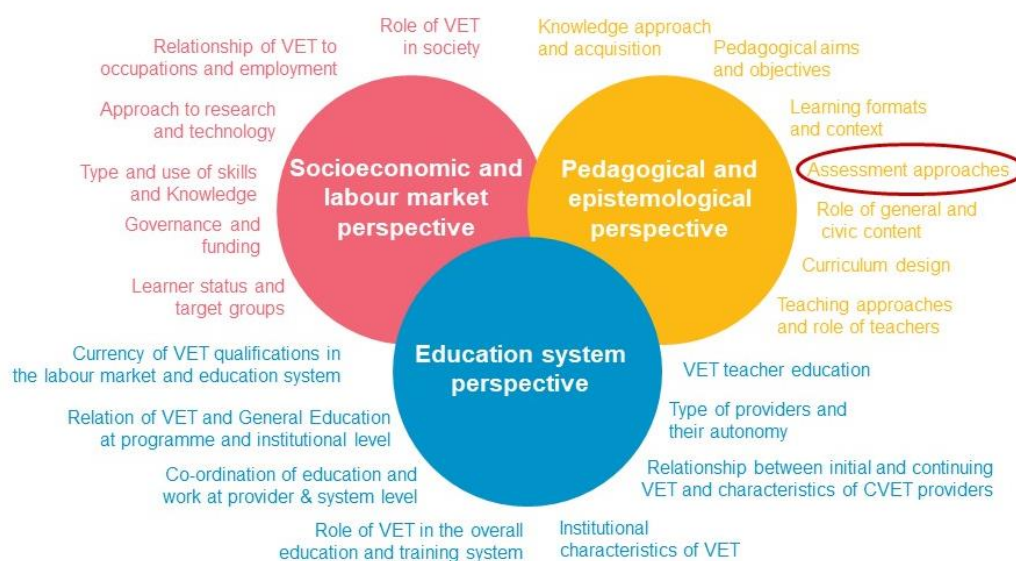
The starting point for our conceptual background and analytical framework is Cedefop’s (extended) ‘three-perspective model for VET’ (Cedefop, 2022, forthcoming-d) <sup>(4)</sup>. This model allows for diachronic (related to changes over history within one country) and synchronic (related to comparisons between countries) analyses of VET systems and the development of related patterns or profiles based on the interplay of characteristics.

---

<sup>(3)</sup> Hanna Siarova, Research Director, PPMI (Vilnius, Lithuania), contributed to this chapter.

<sup>(4)</sup> This model was introduced in the previous Cedefop study on *Changing nature and role of vocational education and training (VET) in Europe*.

Figure 1. The three-perspective model



Source: Cedefop (2022, forthcoming-d) (based on Cedefop, 2020e).

This model includes assessment as one of the dimensions of the epistemological and pedagogical perspective (Cedefop, 2022, p. 23). The research questions presented above clearly indicate that this is not enough to do justice to the field of assessment and its related aspects and to be able to trace changes over the past 25 years. Assessment can also be analysed in relation to the other dimensions linked to the epistemological and pedagogical perspective: for example, the learning environment could be linked to the context of assessment or the teacher's role in relation to the learner could be linked to the teacher's role in assessment of learners. For the other two perspectives, there is no explicit reference to assessment in this model. However, assessment can also be analysed in relation to selected dimensions of the education system perspective (e.g. in relation to quality assurance arrangements in the education system or to the consequences of assessment for progression opportunities) and the socioeconomic perspective (e.g. related to the signalling function of assessment for the labour market).

While the three-perspective model opens up to different aspects of assessment, a more detailed analysis of assessment approaches requires further differentiation of this dimension. This part of the overall study, therefore, focuses on the assessment dimension to shed light on the key features and related change processes in this area.

The following subsections first briefly present the main areas, dimensions and features of assessment and their theoretical references, discussed in the relevant literature. They are presented separately here, but in practice are closely linked or

even interdependent, so that changes in one area may also involve changes in other areas. The key areas include:

- (a) main purposes and functions of assessment: what is the role of assessment?
- (b) scope/focus/content of assessment: what is assessed?
- (c) reference points and criteria for assessments: what is the basis of assessment and what are the criteria for decision-making (the aspects that will guide the judgement)?
- (d) methods, tools and context of assessment and stakeholders involved: how is assessment conducted (how is evidence on learning achieved collected)?
- (e) link between intended learning outcomes, delivery of programmes/qualifications and assessment standards: to what extent are they aligned?
- (f) quality of assessment: which are the key technical characteristics ensuring quality of assessment?

After introducing the main areas, dimensions and features of assessment, in the last section of this sub-chapter we summarise them in a grid (table) in a similar way to the overall analytical framework: we keep the link to the three-perspective model but focus on assessment and present the related dimensions, and variants, in detail. This (in conjunction with the key research questions) guides the presentation of the results of the empirical investigations.

## 2.2. Main purposes and functions of assessment

Assessment can have different functions depending on how the results are to be used. First, they can be used to identify and monitor the achievements and performance of individual learners; the results of this can in turn be used for a variety of purposes (see below). But assessment results can also be used to monitor or evaluate the performance of a VET provider (e.g. as part of external quality assurance measures) or even the performance of a VET system. The certification process resulting in the awarding of an IVET qualification – with its place in the interface between IVET and the labour market – can have an important role to play in ‘improving IVET, in relation to renewing standards and curricula and providing feedback for the education and training process’. However, as research shows, ‘monitoring and evaluation activities regarding certification processes are not systematically used to review IVET and to improve the way learning outcomes are used’ (Cedefop, 2015a, p. 68). While the focus of this study is on the assessment of individual learners, it is important to recognise that the use of assessment to evaluate a provider's performance may have an impact on the assessment practices used (which may be reflected in learners being specifically prepared for the assessment to achieve a good score on this evaluation).



While assessment, which focuses on the individual, can serve multiple purposes, two roles of assessment are often distinguished:

- (a) assessment for learning (formative assessment);
- (b) assessment of learning (summative assessment, with assessment for qualification and certification a specific form).

These two main functions are described in the following paragraphs before presenting some additional views on the purpose of assessment and discussing critical comments on this dichotomy.

Assessment for learning (also referred to as formative assessment or learning-supportive assessment) is used to provide feedback during the learning process, to support learners' learning and improve their performance (pedagogical and didactical function) <sup>(5)</sup>. Formative assessment also supports learners to have an active role and take control of their own learning process. It can be understood as a 'two-way reflective process between teacher/assessor and learner to promote learning to assist individuals to learn by identifying specific learning needs and to adapt teaching accordingly' (Cedefop, 2020c, p. 29). One type of formative assessment is diagnostic assessment, understood as an attempt to identify students' strengths and weaknesses, their current knowledge and potential misconceptions about a topic (Riley, 2017). It is conducted before the start of a learning unit and allows teachers or trainers to adjust their intervention to build on the learners' strengths and to meet their needs (OECD, 2013, p. 140). It can be considered as a form of pre-assessment (creating the baseline for future assessment) that allows a teacher to determine students' individual strengths, weaknesses, knowledge, and skills prior to instruction. It is primarily used to guide lesson and curriculum planning and can inform the individualisation of instruction. The result may indicate, for example, that one group of learners needs additional teaching on a particular part of a unit or course and another group is already more advanced and can be given additional challenges.

The OECD *Handbook for innovative learning environments* (OECD, 2017) even links formative assessment to innovation. In order 'to foster innovation assessments should be designed with a focus on formative assessments and be consistent with the following principles: learning should be made central, social and collaborative, engagement should be encouraged, learning should be highly attuned to learners' motivations and sensitive to individual differences; and lastly

---

<sup>(5)</sup> This is sometimes also referred to as 'pedagogically informed approach to assessment' (Vogt, 2021) and could indicate the original meaning of the term: assessment can be traced back to the Latin word *assidere*, which means 'to sit beside'. 'Literally then, to assess means to sit beside the learner' (Stefanakis, 2002, p. 9 – based on: [Assessment for learning](#))

learning should be demanding but not excessively' (Lifelong Learning Platform, 2021, p. 20).

Even though there are indications 'that assessment for learning can lead to significant achievement gains, in particular for lower achieving students, helping to reduce the inequity of student outcomes' (Hattie and Timperley, 2007; Hattie, 2009), some research also warns that claims on the effectiveness of formative assessment should be considered with caution, due to limitations of the research methodology used by earlier studies (e.g. Bennett, 2011; Baird et al., 2014). Nevertheless, while limited in scope, recent empirical evidence has shown the positive impact of formative assessment methods (such as peer- and self-assessment) on teaching and on student learning outcomes, particularly on the development of transversal skills (e.g. Baird et al., 2014; Cornu et al., 2014; OECD, 2015; Siarova et al., 2017, p. 37), provided they are implemented effectively. There are, however, persistent challenges to the effective implementation of formative assessment, as summarised by Siarova et al. (2017):

- (a) formative assessment is not used consistently in literature and practice;
- (b) it relies on teachers' and students' subjective judgment, with rigid measurement frameworks lacking;
- (c) summative assessments are still prioritised.

Assessment of learning (also called summative assessment because it is cumulative) is usually used to present a summary of student learning and performance (mastery of tasks over a period of time) against a predefined performance standard or set of criteria. The results usually entail real consequences for the learner, such as grading, ranking and selection, and sometimes also for the teacher/trainer or the VET provider (regulative and quality assurance function). The consequences for learners usually relate to decisions on the student's future, such as progression to the next higher grade, entrance into the labour market, or – based on high stakes examinations – entrance into higher education. This type of assessment can also have a prognostic function, as when it refers to or predicts an individual's abilities and potentials that will only manifest themselves in the future. For example, it can be assumed that the assessment for the acquisition of a qualification that allows access to higher education studies determines those competences that are associated with higher education readiness and that are suitable for predicting successful study progression.

The results of summative assessment in IVET are usually visualised in a certificate. Certification of learning outcomes is defined as the 'process of issuing a certificate, diploma or title formally attesting that a set of learning outcomes (knowledge, knowhow, skills and/or competences) acquired by an individual have been assessed by a competent body against a predefined standard' (Cedefop,

2014, p. 42). The certification process can either be related to a period of learning (such as a semester or grade), a part of a qualification (such as unit or module <sup>(6)</sup>) or to an entire qualification, since the awarding of qualifications can be organised differently in countries, subsystems of IVET or related to qualification types. For instance, it can be based on a final (end-point) assessment or a certification (exit) examination at the end of a training programme, or on the accumulation of parts of the qualification – modules, units, credits – without a final assessment (Cedefop (Cedefop, 2015a, p. 30). The advantage of these types of assessments is that they allow for assessing ‘occupational competence as an integrated whole through a ‘synoptic’ assessment’ (Field, 2021, p. 17). Moreover, synoptic assessment may even be required to measure high level ‘meta-skills’ (Field, 2021, p. 22).

Thus, assessment for qualification and certification is a specific form of summative assessment and plays an important role in IVET because of the strong signalling function of formal qualifications: a formal qualification ‘is obtained when a competent body determines that an individual has achieved learning outcomes to given standards and/or possesses the necessary competence to do a job in a specific area of work. A qualification confers official recognition of the value of learning outcomes in the labour market and in education and training’ (Cedefop, 2014, p. 202). As qualifications and the certificates acquired play an important role, it is crucial to ensure the quality of the assessment. Particular attention must be paid to the content validity (ensuring that appropriate content is assessed, a phenomenon which can directly and unambiguously be observed) and construct validity (ensuring that the knowledge, skills and competences that should be assessed are actually assessed, measuring performance indirectly and in relation to a theoretically constructed reference) of the methods and instruments used <sup>(7)</sup>. These assessment processes can also be considered as having a socialisation function, for example, if they support the integration of learners into the respective community of practice or if they are seen as instruments for the reinforcement of professional norms and values (Grollmann et al., 2007; Stenström and Laine, 2006a, p. 157). Grollmann et al. (2007, p. 269) also refer to the ‘latent and secondary functions of established assessment practices’: functions that are generally not obvious at first glance but can only be identified through more in-

---

<sup>(6)</sup> Units or modules are understood here as part of qualifications or programmes. In some VET systems, they can be assessed and possibly also certified independently, while in others they are ‘seen in terms of their relationship to other modules and possibly as part of a qualification, i.e. modules only have relevance in terms of the qualification of which they form part’ (Stanwick, 2009, p. 2794).

<sup>(7)</sup> The concept of validity is addressed in more detail further below. Lau (2016) finds that summative assessments increased the focus on reliability (and hence, standardisation and limited dimensionality) instead resulting in sacrifices in the validity of assessment.

depth analysis. This is analogous to curriculum theory, in which other forms can be distinguished in addition to the explicit or written curriculum: the implicit, unintended, or hidden curriculum, the implemented or taught curriculum, and the achieved or learned curriculum (Cedefop, 2022b, p. 19). This makes it possible to distinguish between intended, unintended, implemented, and experienced assessment.

While summative assessment can serve many different functions, it also comes with some challenges:

- (a) summative assessment that only assesses knowledge and undermines its role in supporting learning can lead to a fragmented view of curricula and the teaching of competences and skills which can be easily measured and quantified (Lau, 2016; Pepper, 2013);
- (b) there are concerns about cultural sensitivity and fairness of standardised summative assessments (Stenlund et al., 2017);
- (c) teachers also have limited preparation to conduct assessments (especially criterion-based summative assessments) and interpretation of results in a fair and culturally sensitive manner (Pepper, 2013);
- (d) there are difficulties in capturing competences and skills that are less quantifiable: capturing learners' development of complex competences, which are often transversal and multidimensional, can pose a challenge to existing summative assessment practices (Siarova et al., 2017).

Some researchers distinguish a third approach to assessment: assessment as learning (e.g. Hayward, 2015). This extends the role of formative assessment for learning and is 'a process through which pupil involvement in assessment features as an essential part of learning' (Dann, 2002, p. 153). This conceptualisation understands assessment as a process of meta-cognition (Earl and Katz, 2006) and encourages students to monitor and practice self-regulation over their learning (Lee and Mak, 2014). Self and peer-assessment practices are often mentioned as examples of assessment as learning. These approaches help students take more responsibility for their learning and monitoring their own development and growth (Earl and Katz, 2006). The notion of sustainable assessment is also sometimes used in this context as it is 'focused on the contribution of assessment to learning beyond the timescale of a given course. It was identified as an assessment that meets the needs of the present in terms of the demands of formative and summative assessment, but which also prepares students to meet their own future learning need' (Boud and Soler, 2016, p. 400). It is understood as a way of integrating assessment with teaching and learning and as an intervention to focus on learning for the longer term.

There are also approaches for reforming summative assessment methods based on grading, by integrating them with formative methods. This is considered as an attempt at helping focus the learning process on offering the same potential progress to all students, building on students' capacities and strengths rather than deficits (Terrail, 2016). Countries have also aimed to integrate formative assessment methods with summative external approaches to build comprehensive and consistent assessment frameworks (e.g. King's-Medway-Oxfordshire formative assessment project in England or Assessment is for learning framework in Scotland, Crossouard, 2011). The integrated approach to assessment also allows for more flexibility when documenting the development of transversal skills (Siarova et al., 2017).

There is, however, some criticism of the widely used dichotomy 'summative versus formative' assessment. This is partly due to the 'somewhat dichotomous reception of 'assessment for learning' as pedagogically desirable and the 'assessment of learning' as a sort of 'necessary evil' in the classroom that is externally imposed on teachers (Lau, 2015). However, especially when it comes to the classroom level, where different kinds of assessment purposes often exist in parallel, clear-cut differentiation seems difficult, if not impossible, and assessment practices and purposes seem to exist on a continuum rather than being part of a strictly dualistic system (Harlen, 2012; Torrance, 2012; Vogt, 2021). It could also be argued that feedback to support learning (formative assessment) cannot be given until a summative assessment is made against set standards, objectives and criteria (Carter and Bathmaker, 2017, p. 464). Wiliam (2021) points out that this categorisation refers particularly to the timing of the assessment and what the evidence collected is used for: 'If we give a student a test half way through the block, then whether it is formative or not depends on what we do with the evidence from the assessment. If we score the assessment, and use that score to contribute to the final grade for the semester, it is functioning summatively, but if we also give the student feedback about what needs to improve, then it is also functioning formatively. The problem, of course, is that the presence of the score can often prevent students from looking at the feedback on how to improve. They look at their own score...and then they look at a neighbour's score – summative drives out formative. Any assessment can be used both formatively and summatively, but usually one function interferes with the other, so it is generally best to decide at the outset about the purpose of the assessment – is this to help the learner improve, or tell them how good they are? It's very difficult to do both at the same time.'

This aspect is also discussed in the *Prospective report on the future of assessment in primary and secondary education*. Newton (2007) highlights the

many different uses of assessment judgements, including social evaluation, student monitoring, transfer, guidance, institution monitoring or national accounting uses. Black and Wiliam (1998) and Stobart (2008) distinguish between individual and organisational level uses of summative assessments. Taking into consideration these principal differences, Tveit (2018) suggests distinguishing between three core purposes of educational assessment: to support, certify and govern learning and instruction (European Commission, 2020a, p. 59).

Despite these critical reflections (but bearing them in mind), we will retain the distinction in assessment for and of learning as analytical categories, since they have found widespread use. The following table presents the dimensions and features identified in the purposes and functions of assessment.

Table 2. **Dimensions and features identified in relation to the purposes and functions of assessment**

Dimensions	Features		
1. Purpose of assessment	Assessment for learning (formative assessment)	Assessment of learning (summative assessment)	Assessment for qualification and certification (specific form of summative assessment)
2. Basis for awarding a qualification	Assessment of each component of a programme/qualification (i.e. accumulation of units, modules) without a final assessment	Assessment of each component of a programme/qualification (units, modules) and final (end point) assessment	Final (end point) assessment (separated from education and training process) only

Source: Cedefop.

## 2.3. Scope/focus/content of assessment

The question of ‘what is assessed’ in general refers to ‘types of learning outcomes’ and to the learning contexts in which these learning outcomes are obtained. This is closely linked to the first part of the overall study since it refers to the epistemological basis of VET (see Cedefop, 2022b; 2022, forthcoming-d).

### 2.3.1. Types of learning outcomes

The first part of this study (Cedefop, 2022b) introduced the following classification of ‘knowledge’ categories: first, a distinction can be made between ‘theoretical knowledge (knowing that)’ and ‘practical knowledge (knowing how, skills)’, based on the discussion of ‘tacit knowing view’ as opposed to a ‘cognitive view’ by Neuweg (2004). For assessment in IVET that has a strong signalling function for the labour market, it is not sufficient exclusively to assess theoretical knowledge

but to also include assessment of the ability to apply knowledge in concrete situations and to use this knowledge, skills and competences to perform concrete actions in practice.

Moreover, 'theoretical knowledge as well as practical knowledge/skills can each be divided into 'specialised' and 'non-specialised' versions, depending on whether or not the knowledge in question is systematically structured' (Cedefop, 2022, forthcoming-d). According to this classification, both main categories include 'occupation-specific' (specialised or structured by contextual purposes) as well as 'transversal' (non-specialised) theoretical knowledge and skills. The latter are considered as relevant in any kind of work, learning or life activity. They are called 'transversal' as they 'transcend a specific field' (Dębowski et al., 2021, p. 8).

Many different terms are used when referring to learning outcomes that could be related to transversal ones (such as soft skills, 21st century skills, foundation skills, basic skills, generic skills) and, in recent years, many attempts have been made to conceptualise and classify transversal learning outcomes (knowledge, skills and competences) for different purposes and in different contexts. At the European level, the concept of 'key competences' is used (European Commission, 2018; European Parliament and the Council of the European Union, 2006) <sup>(8)</sup>).

These eight key competences are:

- (a) communication in the mother tongue;
- (b) communication in foreign languages;
- (c) mathematical competence and basic competences in science and technology;
- (d) digital competence;
- (e) learning to learn;
- (f) social and civic competences;
- (g) sense of initiative and entrepreneurship;
- (h) cultural awareness and expression <sup>(9)</sup>.

In the ESCO context (the multilingual classification of [European skills, competences, qualifications and occupations](#)), a proposal for the definition of the

---

<sup>(8)</sup> Sometimes a distinction is made between 'traditional' key competences (communication in the mother tongue, communication in foreign languages, mathematical competence, and basic competences in science and technology) and 'non-traditional' competences (digital competence, cultural awareness and expression, sense of initiative and entrepreneurship, social and civic competence, and learning to learn) (Siarova et al., 2017, p. 46).

<sup>(9)</sup> While the updated Recommendation maintains a broad set of eight key competences, mother tongue and foreign language competences have been integrated into multilingual competence. The competence literacy, formerly part of the key competence communication in the mother tongue, has become a key competence in its own right.

term ‘transversal skills and competences’ <sup>(10)</sup> and a structuring of transversal skills and competences was issued in September 2020 and subsequently discussed and revised. The following definition is proposed: ‘Transversal skills and competences (TSCs) are learned and proven abilities which are commonly seen as necessary or valuable for effective action in virtually any kind of work, learning or life activity. They are ‘transversal’ because they are not exclusively related to any particular context (job, occupation, academic discipline, civic or community engagement, occupational sector, group of occupational sectors, etc.)’ (Noack, 2021, p. 3). The note prepared by the expert group recommends the use of six categories for structuring TSCs in ESCO:

- (a) core skills and competences;
- (b) thinking skills and competences;
- (c) self-management skills and competences;
- (d) social and communication skills and competences;
- (e) physical and manual skills and competences;
- (f) life skills and competences.

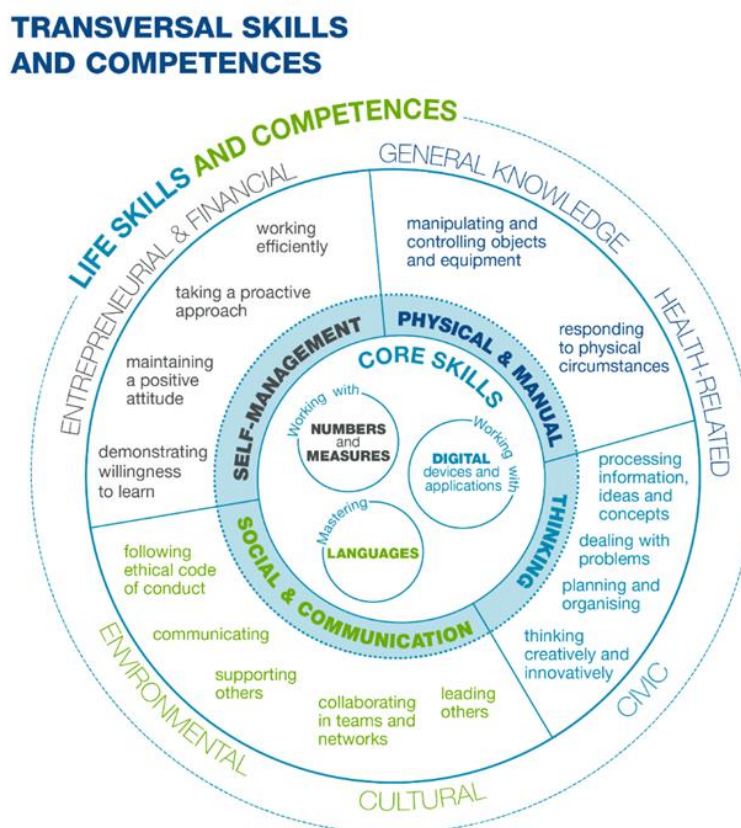
These six categories (level 1), visualised by the circle in Figure 2, are arranged ‘from internal to external’, from the core skills and competences defining the individual to the life skills and competences embedded in a broader social context. ‘To allow users to drill down into the terminology, the six main TSC Categories have been disaggregated into a set of discrete clusters (Level 2), supporting the allocation of single skills and competence concepts (Level 3). The model facilitates the identification of relevant concepts and the relationship between them’ (Hart et al., 2021, p. 5).

---

<sup>(10)</sup> ‘Knowledge concepts are not included separately in the taxonomy; knowledge is understood as an integral component of skills and competences’ (Hart et al., 2021, p. 3).



Figure 2. Transversal skills and competences in ESCO



Source: Hart et al. (2021, p. 5).

Although transversal learning outcomes are often distinguished from occupational ones in curricula, programmes and qualifications as well as in classification systems, there is a lack of terminological clarity related to this concept. There is sometimes criticism of a lack of clarity related to the aspect of ‘transversality’: can a clear distinction between occupation-specific and transversal learning outcomes be made in all cases or are there not rather many grey areas? To what extent is it possible for learning outcomes acquired in one context to be transferred to, applied and reused in another and to what extent are learning outcomes actually context-bound? A distinction could be made between ‘transferable’ (in terms of learning theories) or ‘portable’ (in terms of human capital theory) learning outcomes (see Cedefop, 2022, forthcoming-b), which are applicable across an occupational range, and ‘transversal’ ones in the sense of being multiply realisable: for example, the ability to communicate can require different mixes of skills in different contexts and vary according to the communicator/communicatee.

Reference is also sometimes made to learning outcomes related to ‘general knowledge subjects’, such as languages, mathematics, history and geography. These could also be considered transversal learning outcomes as these general knowledge subjects are often provided in VET courses that are not attached to occupational learning outcomes. It might equally be argued that occupation-specific content is integrated within some of these courses (for instance in languages or maths). In other cases, this is usually only to a limited extent, such as with history or geography, but the learning outcomes associated with them are sometimes of high importance, in particular for preparation for higher education (EQF Advisory Group, 2019).

In the context of this study, capturing the content of assessment (‘what is assessed’) in IVET, and analysing changes in approaches and conducting comparisons across countries requires a distinction between occupation-specific and transversal learning outcomes and general knowledge subjects (here understood as different types of learning outcomes). The empirical research activities in the previous parts of the overall study also used these terms.

### **2.3.2. Learning contexts**

Learning outcomes can be achieved in formal, non-formal and informal learning contexts, so that assessment processes in IVET can also relate to these different contexts. Formal learning contexts mainly include VET schools (VET institutions) and practically oriented learning in companies or other workplaces. In some IVET schemes there are arrangements for the recognition of prior learning or the validation of non-formal and informal learning (based on the Council Recommendation of 2012, Council of the European Union, 2012) in the framework of the process for obtaining an IVET qualification <sup>(1)</sup>. The *Study supporting the evaluation of the Council Recommendation of 20 December 2012 on the validation of non-formal and informal learning* (European Commission, 2020c) reveals that while the Council Recommendation defines four stages of VNFIL (identification, documentation, assessment, and certification), not all validation practices include or refer to all four of them. Assessment and certification, however, are the most recurrent stages in any national VNFIL (validation of non-formal and informal learning) system and assessment is of particular relevance when the aim of a validation procedure is to obtain a formal VET qualification (‘summative’ procedure). For sufficiently functioning validation procedures, a structuring of VET

---

<sup>(1)</sup> Non-formal and informal learning contexts offer learning opportunities outside of education or training institutions and include, for example, ‘extracurricular activities or learning possibilities in the private context’ (Michaelis and Seeber, 2019, p. 3).

programmes and qualifications into smaller components (modules, units) that can be assessed separately is useful <sup>(12)</sup>.

It could be argued that if the focus is on individual learning outcomes, the formality of the learning context in which the learning outcomes to be assessed were achieved does not really matter. This is correct insofar as assessment is about determining the extent to which a learner has attained particular knowledge, skills and competences compared to the specified criteria and not where these learning outcomes have been obtained. However, it needs to be acknowledged that learning outcomes that have been acquired in various contexts outside the formal system are particular to each person and might first need to be identified with the support of counsellors or advisers before they can be assessed (i.e. compared with specific criteria). Learning outcomes achieved in informal learning contexts consist largely of ‘knowing how’, which is a challenge when the given criteria are based instead on ‘knowing that’. The question of contextualisation and transferability of learning outcomes must also be taken into account (Aarkrog and Wahlgren, 2015, p. 42).

From another perspective, the role of validation of learning outcomes acquired outside the formal education context is also important as it contributes – albeit unintentionally – to the establishment of social inequalities in formal education: a recent article reframes the debate on validation and ‘questions the widespread view that there is little validation in formal education’ by arguing ‘that validation is pervasive in formal education, but much of it is covert’ (Souto-Otero, 2021, p. 2). The author introduces the distinction between covert and overt validation: ‘In covert validation, validation is not the main purpose, it is largely invisible, not seen as a separate process and not thought of. In overt validation, the validation activity has a stipulated and predefined process, and it is conceptualised as a validation practice. Both can lead to a certification, partly or wholly based on validation in the overt type, but only partly supported by validation in the covert type. This is because covert validation is complementary to ongoing formal education experiences in a way that overt validation does not have to be. While covert validation is largely invisible in validation debates, it is pervasive in the formal education system. By contrast, overt validation is visible but much less frequent’ (Souto-Otero, 2021, p. 6). Covert validation can be further divided into implicit and embedded: ‘In the first type, the knowledge, skills or competences validated are not directly reflected in the credential. In embedded validation the knowledge, skills or competences validated are reflected in the credential, in particular through marks’ (Souto-Otero, 2021, p. 6). Since the latter form is associated with

---

<sup>(12)</sup> The approach of structuring programmes into modules is explored in the second part of the overall study (Cedefop, 2022, forthcoming-a).

assessment and certification (as it incorporates knowledge, skills and competences developed outside of formal education into the output of formal education), it is given further attention here. Learners develop 'cultural capital' outside the formal learning context in different activities in non-formal and informal contexts. This does not happen in the same way for all learners, but depends on aspects such as social context, stimulation from the parental home, and existing forms of support, accentuating social inequalities when the 'cultural capital developed through these activities is valued in formal education and reflected in school grades' (Souto-Otero, 2021, p. 8). This is not necessarily done intentionally but teachers would in fact be 'unable to unbundle embodied cultural capital developed through formal, non-formal or informal learning even if they were asked to' (Souto-Otero, 2021, p. 9). This consideration is of particular importance when it comes to the question of the connection between teaching and learning and the extent to which the performance indicators or those associated with better grades can actually be achieved within the framework of the respective VET programme, or to what extent it is (at least implicitly) expected that the corresponding learning outcomes should be acquired in non-formal or informal learning contexts. The important question in the context of this study is whether assessment explicitly includes learning outcomes from formal, non-formal and informal learning contexts or not <sup>(13)</sup>.

As stated by Aarkrog and Wahlgren (2017, p. 48) 'despite the great political interest in key competences, learning in informal and nonformal settings, and the need for assessing prior learning, only limited research has been conducted about assessing competences obtained in informal settings'. In recent years, however, some projects and studies were conducted related to assessment in the context of validating non-formal and informal learning (e.g. Fahrenbach and Luomi-Messerer, 2021; Lifelong Learning Platform, 2018; Looney, 2019; Luomi-Messerer, 2019; Petanovitsch and Schmid, 2019).

The following table presents the dimensions and features identified in the area of 'content' of assessment.

---

<sup>(13)</sup> This analysis can also be understood as pointing to an increasing role of non-formal education offers to prevent inequalities.

Table 3. **Dimensions and features identified in relation to the content of assessment**

Dimensions	Features		
3. Types of learning outcomes	Occupation-specific knowledge, skills and competences	Transversal knowledge, skills and competences	General knowledge subjects
4. Integration or separation of different types of learning outcomes	Separate assessment of occupation-specific KSC, transversal KSC and general knowledge subjects	Partly separated, partly integrated assessment	Integrated assessment
5. Learning contexts	Assessment explicitly includes learning outcomes from formal learning context only	Assessment explicitly includes learning outcomes from formal, non-formal and informal learning contexts	

NB: Table 3 is the continuation of Table 2.

Source: Cedefop.

## 2.4. Basis and criteria for assessment decision-making

According to Cedefop, ‘assessment standards may specify the object of assessment, performance criteria, assessment methods, and the composition of the jury entitled to award the qualification. Assessment standards answer the question ‘How will we know what the student has learned and is able to do in employment?’ (Cedefop, 2009a, p. 11). This is a very broad definition – including the content of the assessment as well as the methods used and the actors involved – and seems to refer rather to assessment regulations in general. In the context of this study, the term assessment standard is more related to the content of the assessment and the criteria used to assess performance, i.e. the aspects that will guide the judgement. Sometimes, the term ‘assessment specifications’ is used when referring to identification of the methods and the criteria underpinning assessments (Cedefop, 2017, p. 23): ‘In an outcomes-oriented approach, assessment criteria should define what performances, actions or capabilities can be taken as evidence that the intended learning outcomes have been achieved’ (Cedefop, 2015b, p. 62). ‘These criteria, using learning outcomes statements, are often formulated as threshold levels which have to be met by the candidate. Thus, these criteria can be considered as reference points for the assessment. Assessment standards and the criteria they use are more detailed than qualifications standards and curricula in the sense that they have to describe the requirements precisely to the learner. These requirements normally support summative assessments at the end of the learning process, but can also orient

formative assessments taking place throughout the learning process' (Cedefop, 2017, p. 23). Assessment specifications 'can also indicate how a learning experience is to be graded, indicating how learning can be achieved at different levels of complexity and proficiency' (Cedefop, 2017, p. 24). These specifications are of particular importance in assessment for certification as they 'ensure consistency regardless of where, when or by whom certification takes place' (Cedefop, 2017, p. 43).

It is important in the context of this study to explore the extent to which assessment standards or specifications are explicitly defined (and at which level of specificity and detail), used as reference points to support assessments for certification, aligned to qualifications standards <sup>(14)</sup>, explicitly translated into assessment criteria to communicate expectations, and formulated to specify and articulate different levels of performance/mastery/ achievement.

In VET contexts where standards and criteria (as statements that guide assessment) are provided, learner attainment is measured against them. Criterion-based assessment allows judgments about the level of an individual's learning with respect to shared benchmarks or agreed standards (criteria). The existence of criteria against which a candidate is assessed is considered as important to certification (Cedefop, 2009b, p. 17). 'These standards should correspond to the outcome of an education and training process specified in documents such as training regulations, qualification profiles, framework curricula, educational requirements, etc.' (Cedefop, 2015a, p. 43). Ideally, they are closely aligned to qualifications standards.

In contrast to criterion-referenced assessment, norm-referenced assessment is the assessment of a learner's performance in comparison to other learners in the same cohort (peers): 'Norm-referencing is founded on psychometric principles, comparing individuals against defined norms, which places students in competition with each other' (Glaser 1994). A major criticism of norm-referencing is that it provides little or no information about what people can do or how proficient they are, and 'is bound to make at least half of those involved appear and feel like failures' (Wolf 1993, p. 5). Levels of achievement associated with norm-referenced assessment occur after teaching and testing and relate to comparing and ranking students, whilst those associated with criterion-referenced assessment are established before teaching and testing commence, and so recognise

---

<sup>(14)</sup> Similar to qualifications standards, assessment standards can either have a stronger orientation towards the labour market or to educational delivery or can be connections between these two different types of orientation. Their orientation and scope are often linked to the stakeholders involved in developing them and the context of use.

achievement by all individuals who achieve established criteria (Biggs, 1999; Carter and Bathmaker, 2017, p. 462).

Assessment standards or specifications and criteria, if explicitly defined, can be seen as a common reference point for teachers/trainers and learners and point towards the *de facto* priorities of an education and training system. They need to be carefully prepared and communicated as the specifications could be understood to represent the most relevant part of the programme or qualification that deserves the strongest focus. Other learning outcomes not reflected here could thus be neglected.

It can generally be assumed that the increasing use of learning outcomes to describe qualifications, programmes and curricula leads (or will lead) to greater emphasis on assessment standards and criteria, because this makes the competence requirements to be fulfilled visible and more communicable (but also more contestable). Moreover, the increasing use of approaches to validating non-formal and informal learning, in relation to the acquisition of a VET qualification, also requires the specification of assessment criteria as a reference to explore or confirm that someone has achieved the learning outcomes required for a qualification in the expected quality and depth. The requirements as well as the related decisions can thus be made transparent and comprehensible, which is the basis for trust in validation approaches.

However, there are also challenges to these descriptions that are based on epistemic considerations and relate to the limits of language in general: to what extent do different people actually understand the same thing when they read the assessment standards and criteria, or what room for interpretation is there? It has been questioned whether and to what extent it is possible to define clear and unambiguous criteria and ensure consistent assessment across assessors. It is also important to note that perfection in terms of transparency or explicitness of the criteria, in the sense of a very high level of detail, is practically impossible to implement (Carter and Bathmaker, 2017, p. 464).

Table 4 summarises the dimensions and features identified in 'references' for assessment.

Table 4. **Dimensions and features identified in relation to the ‘references’ for assessment**

Dimensions	Features		
6. Basis of assessment	Norm-referenced assessment		Criterion-referenced assessment
7. Reference points to support summative assessment	Assessment specifications and standards are not explicitly defined	Assessment specifications and standards are explicitly defined, but only at a general level	Assessment specifications and standards are explicitly defined and translated into assessment criteria, formulated to specify and articulate different levels of performance /mastery/ achievement

NB: This table is the continuation of Table 3.

Source: Cedefop.

## 2.5. Assessment methods, tools and context, stakeholder involvement

The following paragraphs reflect on the methods and tools used for gathering evidence of learning achievements, the context of assessment and the stakeholders involved. This information might be contained in assessment standards or specifications.

### 2.5.1. Methods and tools used for gathering evidence of learning achievements

Evidence on learning achievements can generally be collected from several sources, using various methods. In assessment processes for qualification and certification in VET, a combination of different methods is often used (Cedefop, 2015a, p. 51; Stenström and Laine, 2006a, p. 160).

For assessing theoretical knowledge (knowing that), for example, written (e.g. multiple choice) or oral tests (with open or closed questions) can be used for collecting evidence that learners can recall and describe facts and principles, analyse or evaluate concepts and apply them to specific cases and solve problems. For assessing practical knowledge (knowing how, skills), direct evidence can be collected, for example, by using observations (e.g. skills demonstrations at workplaces, simulation exercises, role plays <sup>(15)</sup>) or oral questioning (e.g. reflections and justifications of actions or decisions); indirect

<sup>(15)</sup> For a discussion on the use of in vivo role plays for performance-based test of students' communication skills see Braun et al., 2018.



evidence can be taken from the review of work samples or products (e.g. a product made of a specific material such as wood, metal, plastic, ceramic; a dish; a computer programme, a business plan). If available, supplementary evidence can also be used, such as third-party feedback (e.g. reports from instructors or practice supervisors or even classroom observations by peers), work diaries, written reflections (narratives) or video analyses of lessons. For the context of validation of non-formal and informal learning, Colardyn and Bjornavold (2004) identified five categories of methods for collecting evidence and distinguished between examinations (traditional written or oral tests, with open or closed questions), declarative methods (for justifying what one can do in relation to required learning outcomes), methods based on observation (e.g. observation of performance in a practical work situation), simulations (i.e. competences are demonstrated in a context closely resembling a real work situation), and evidence extracted from work (or other) situations.

Assessment supporting learning in VET can be based on various methods, such as direct observation and a variety of formal and informal assessment strategies (Stecher et al., 1997, p. 14). It is also possible to use digital approaches (Looney, 2019; Luomi-Messerer, 2019), particularly to support self-assessment<sup>(16)</sup>. Siarova et al. (2017) refer to the following types of formative assessment: teacher, self and peer reports and rubrics, performance-based assessment, portfolios displaying evidence of achievements, computer-adaptive tests, game-based assessment, and learning analytics.

Different assessment methods also require the use of appropriate assessment tools. The selected method ideally informs the assessment tool which contains the instrument used (the specific questions or tasks used for collecting evidence) and specifies the procedures and conditions for collecting, documenting, analysing and evaluating evidence<sup>(17)</sup>.

The methods and tools used in the assessment process have an impact on what kind of evidence can be gathered; ; the consequent selection of methods and tools is ideally justified by the content of the assessment (types of learning

---

<sup>(16)</sup> See also [Assess@Learning](#), a European policy experiment which focuses on digital formative assessment practices in schools.

<sup>(17)</sup> According to the Australian Skills Quality Authority (2016, p. 2), an assessment tool is made up of the following components: 'context and conditions of assessment, tasks to be administered to the student, an outline of the evidence to be gathered from the candidate and evidence criteria used to judge the quality of performance (i.e. the assessment decision-making rules). This term also takes in the administration, recording and reporting requirements, and may address a cluster of competences as applicable for holistic assessment.'

outcomes) <sup>(18)</sup> and the assessment criteria (performance indicators). The forms of assessment applied should 'allow and stimulate the expression of multidimensional vocational knowledge' (Hiim, 2017, p. 16) and must be appropriate to the 'what' (i.e. the 'object' of the assessment) and the degree of complexity of the 'object' to be assessed. For example, 'know-how, both as ability to act appropriately and as ability to give an account of how one should act appropriately, is important in the assessment of know-how in relation to complex activities' (Winch, 2016, p. 18). Winch (2016, p. 24) further argues, 'that a significant element of the assessment of more complex forms of know-how is that they be susceptible to explanation and justification in hypothetical circumstances where repeated action is not possible'; and 'we cannot rely on performance of the relevant actions alone, except for the simplest kinds of professional know-how' (Winch, 2016, p. 28). In any case, it is also pointed out that performance can be observed/measured/evaluated while the capabilities, abilities and skills that make up competence are not accessible. Thus, judging competence always involves inference (Hager and Becket, 2007). It can be said that a methodology, e.g. for recording practically acquired skills can, or even should, consist of a battery of tools.

#### **2.5.2. Where assessment is conducted and proximity to the world of work?**

In VET, assessment can take place in the school-based environment, in classrooms, workshops or laboratories at the VET school or institution, or in companies or other workplaces. Authenticity, as 'the degree to which an assessment mirrors the ways in which tested knowledge and skills will be used in real world, is a critical characteristic of assessment' in VET (O'Neal, 2016, based on Dębowski et al., 2021, p. 77). Authenticity in learning and assessment can refer to different aspects, including 'realism (real-world resemblance), contextualisation (situated learning) and problematisation (problem solving)' <sup>(19)</sup>. A definition of authentic assessment containing six essential characteristics is offered by Wiggins (1998, based on Dębowski et al., 2021, p. 78) (who resisted a dichotomisation

---

<sup>(18)</sup> This also applies to the types of assessment linked to their roles. For example, a recently published study emphasises that formative assessment is 'particularly suited to the assessment of social and emotional competences (e.g. observing and evaluating 'personal, social and learning to learn' competences in meaningful contexts) that may not be easily measurable using traditional assessment practice' (Cefai et al., 2021, p. 8).

<sup>(19)</sup> In brief, authentic assessment requires students to put knowledge into practice (Eddy and Lawrence, 2013) and be reflective of the process (Rennert-Ariev 2005; Nyanjom et al., 2020). For further discussion on authentic competence assessment see (Deutscher and Winther, 2018).

between authentic and non-authentic, on the basis that all assessments exist on a continuum of authenticity):

- (a) assessment experience reflects the way content, skills, and behaviours are implemented in the real world;
- (b) assessment requires the learner to make a series of informed choices in order to navigate a problem with many potential outcomes;
- (c) assessment requires action on the part of the learner, and those actions would be recognisable to an expert as inherent to the field being tested;
- (d) context of the assessment is as similar as possible to the content of the real-world equivalent;
- (e) assessment requires the learner to employ a range of complementary skills in order to navigate the problem;
- (f) assessment includes feedback on performance, and the opportunity to be reassessed after having incorporated that feedback. Because of this, authentic assessment sometimes overlaps with 'performance assessment'.

The fact that authenticity of assessment including the assessment environment, i.e. an environment that closely resembles a real working environment, is an important aspect for assessment in VET, as the Cedefop study on quality assurance and certification shows (Cedefop, 2015a, p. 52): 'Most countries make a large effort to create assessment settings as close as possible to real work environments. The aim of this approach is to ensure that IVET is providing programmes and competences that meet labour market needs. Although these methods are more complex and often more costly than traditional assessment methods (e.g. written tests, oral exams), most IVET systems simulate real working-life situations in VET schools'. While research shows that authentic assessment procedures are experienced as much more meaningful by students (Gulikers et al., 2018) few countries implement assessment in authentic work (e.g. as part of work-based learning in a company).

A more general distinction related to the environment of assessment can be made between face-to-face approaches (individuals or groups) and online approaches using digital tools and artificial intelligence (AI). Technological developments also have an influence on assessment and can lead to the introduction of new instruments, such as new digital instruments or virtual assessment forms (e.g. virtual or augmented reality assessments, simulation-based assessments, game-based learning and assessment, e-portfolios). The final report of the 2018-20 ET2020 working group on VET (European Commission, 2020b, p. 65) highlights the use of AI as it 'can enhance the potential of digital assessments to capture finer analytical insight into students' performance by enabling more detailed, informative feedback.' The example given refers to the

potential of AI in detecting reading difficulties in learners. The strengths of AI in assessment include precision, efficiency, and consistency in applying the same criteria across students, and immediate and detailed feedback on performance. It can be used for enhancing learning, rather than making final, authoritative, decisions about student performance. However, key concerns are related to the level of transparency of the rules applied, the human scoring establishing the validity of machine-generated scores, and the ongoing quality control.

The report of the 2018-20 ET2020 working group on VET also points to various opportunities for digital assessment, such as applying individualised approaches (as with the use of ePortfolios, see also European Training Foundation, 2018, p. 31). Digital assessment 'can allow for more creative problem solving by introducing new materials (e.g. audio/ video files), while enabling reduced cost and greater time efficiency' (European Commission, 2020b, p. 66). Digital tools can also enhance formative assessment in several ways, for example by providing rapid (real-time) feedback and developing next steps of learning at an appropriate level of difficulty (Looney, 2019) <sup>(20)</sup>. It could also be argued that digital tools accelerate student learning through higher cognitive engagement.

Some authors argue for learner-centred individualised learning approaches which would fully embrace the opportunities offered by new technology, such as out-of-institution learning opportunities attuned to the interests and needs of each student, competences-based graduation requirements and assessment strategies, and student ownership and agency in their learning (Olofson et al., 2018). Using technology in assessment is considered as having the potential to shift the focus of assessment from a retrospective to a more 'prospective, process-based model' where one should assess not only what students have learned, 'but also what are they prepared to learn as they encounter new challenges in the future' (Chin et al., 2016).

While digital assessment can improve efficiency, comparability and accountability, it needs to be used with cautiousness and carefully planned since it could also lead to unintended consequences: it could 'lead to increased focus on tests that allow automated assessment, such as multiple-choice tests, which would in fact represent a step back from more innovative and learner-centred pedagogical approaches' (European Commission, 2020b, p. 66, based on ET2020 Working Group on Digital Education: Learning, Teaching and Assessment

---

<sup>(20)</sup> 'Digital formative assessment includes all features of the digital learning environment that support assessment of student progress and which provide information to be used as feedback to modify the teaching and learning activities in which students are engaged. Assessment becomes 'formative' when evidence of learning is actually used by teachers and learners to adapt next steps in the learning process' (Looney, 2019, p. 10).

(DELTA)). Another unintended effect could be a greater focus on constantly monitoring and controlling learning progress or learning gaps enabled by digital tools, although the actual intention might have been to use these tools for quick and flexible support to individuals in their learning processes. The ethical issues also need to be considered, especially those that arise with the use of AI and other digital forms (related to the assumptions the algorithms are based on, their limitations, what human judgement is needed before acting on the algorithm's output).

Callan and Johnston (2020) state that while VET teachers, for instance, advocate for the increased use of e-learning and e-assessment, the same teachers identify major risks and challenges around managing the validity, sufficiency and authenticity of evidence collected through such assessments. Despite the considerable flexible learning experiences there are several trade-offs associated with this transition from more traditional forms of delivery and assessment. Teachers often report issues around managing situational factors in technology choices (e.g. the ease of use of a new technology; openness to testing and trials; availability of technical supports; financial costs), challenges to institutional logics, attitudes and practices (e.g. staff and leader attitudes and support for the use and risks of new technology for delivery and assessment; compatibility with institutional values) and managing more dispositional issues (e.g. attitudes of learners, teachers and employers towards using new forms of assessment). Together these factors, and many others, shape the uptake and sustainability of any new technology that might be introduced to transform delivery and assessment practices in VET programmes. As noted by the expert teachers in a recent study, there are real risks to the reputation of individual VET institutions and any training system where these trade-offs were not managed well. For example, experience shows that even where national e-assessment guidelines are available, external auditors can still challenge the validity and reliability of any form of e-assessment and raise issues around authentication. However, these forms of assessment are especially instrumental in distance vocational learning (Petrenko et al., 2020).

### **2.5.3. Stakeholders involved: who is assessing?**

Assessment procedures in IVET also differ in relation to the stakeholders involved in defining assessment content, design and the judging procedure. These stakeholders can include teachers, trainers/workplace instructors, other labour market representatives (such as professionals from the respective field or social partner representatives), as well as external agencies (such as national assessment centres). Some IVET schemes have clear rules concerning the

selection and competences (or even training and qualification) of assessors <sup>(21)</sup>. However, while assessment is included as a key component in teacher education, many actors that are primarily connected to workplaces might be without any formal competence in assessment and there might also be different views on the competences to be assessed: ‘Mulder and Winterton (2017) describe the tensions between competence-based and competence-oriented assessment in VET. The former is based on learning outcomes as described in the curricula and often used in schools, the latter being quality requirements to work performance at workplaces’ (Nore and Lindberg, 2020, p. v).

In learner-centred approaches learners themselves (self-assessment <sup>(22)</sup>) or their peers (peer-assessment) are actively involved in assessment. Panadero et al. (2018, p. 3) state that ‘in the past two decades, there has been a growing interest in how the use of self-assessment for formative purposes can enhance student learning, in contrast with summative self-assessment, which focuses mostly on the accuracy of the self-grading’. Especially with the focus on sustainable assessment (from a lifelong learning perspective), it seems necessary that the responsibility for the assessment process gradually shifts from the teacher to the learners, because after graduation people have to take charge of their own learning (Boud and Soler, 2016).

#### **2.5.4. Organisation of assessment**

The question of who is involved in the assessment is linked to the governance arrangements and the organisation of the assessment: assessment can be done, for example, ‘by individual teachers working alone within single institutions. Alternatively, assessment can be done by groups of teachers within a single institution [...], assessment can be enacted and governed by groups of teachers across institutions, almost invariably but not necessarily within the same discipline or field. [...] Assessment may also be governed from outside institutions. This work may involve teachers working with third-party organizations or third-party organizations working alone’ (Coates, 2018, p. 13).

---

<sup>(21)</sup> ‘Typical requirements for assessors are: pedagogical training and/or the vocational specialisation in the respective profession, (defined minimum time of) professional experience or defined minimum age’ (Cedefop, 2015a, p. 47).

<sup>(22)</sup> Self-assessment is defined ‘as involving a wide variety of mechanisms and techniques through which students describe (i.e. assess) and possibly assign merit or worth to (i.e. evaluate) the qualities of their own learning processes and products’ (Panadero et al., 2018, p. 4). For a discussion on self-assessment and self-reflection to measure and improve self-regulated learning in the workplace see van Loon, 2018; spelling assessment and instruction in VET contexts is discussed in Daffern, 2018.

A general distinction is often made between internal (conducted at the provider, by teachers and trainers) and external (conducted outside the provider, such as by national assessment centres) assessment. For example, assessment for learning (formative assessment) or of learning (summative assessment, either for specifying whether a learner is entitled to progress to the next grade or for awarding a qualification) can be conducted internally while external assessment usually refers to final exams with a view to awarding a qualification. In 'combined' or 'hybrid institutions' (education providers seeking to combine vocational and general subjects in an integrated way) the assessment may be carried out in whole or in part (perhaps for general subjects) outside the VET provider <sup>(23)</sup>.

However, such a dichotomy is considered an 'oversimplification of a continuum that reflects the proximity of an assessment to the enactment of specific instructional and learning activities' (Pellegrino, 2014, p. 7). It seems to be more useful to see different assessment practices as different points on this continuum.

Another distinction can be made between centrally and locally (i.e. at VET provider level) designed and implemented assessment. Applying a centralised approach can ensure standardisation of certification processes and can provide valuable information for education authorities: 'National learning assessments evaluate learning outcomes based on criteria and expectations set forth by national education authorities. [...] They are intended to provide national policy-makers with systematic information about the status of students' learning outcomes and the extent to which students attain pre-defined standards or proficiencies' (Benavot and Tanner, 2007, p. 5). A decentralised approach, on the other hand, provides more flexibility. In some IVET schemes, the final assessment is organised in a decentralised way: it is organised by training providers or regional authorities who are also responsible for developing examination questions or tasks. In VET schemes without a final assessment, assessment is usually organised in a decentralised way (by schools or other VET providers). In many cases, a combined approach can be identified for the same exam: for example, exams are developed at national level and are organised by regional authorities or at provider level (Cedefop, 2015a, pp. 33-36).

Table 5 provides an overview of the dimensions and features identified in the area of 'how' assessment is conducted.

---

<sup>(23)</sup> The changes related to this type of institutions are explored in Cedefop (2022, forthcoming-c).

Table 5. **Dimensions and features identified in relation to how assessment is conducted**

Dimensions	Features		
8. Sources/methods for collecting evidence related to theoretical knowledge	Written test	Oral test	
9. Sources/ methods for collecting evidence related to practical knowledge	Direct evidence (e.g. observations – skills demonstrations at workplaces, simulation exercises, role plays; oral questioning – reflections and justifications of actions or decisions)	Indirect evidence (e.g. review of work samples or products)	Supplementary evidence (e.g. third-party feedback, work diaries)
10. Internal/ external	Internal assessment (teachers from the VET institution)	Both internal and external assessment	External assessment (third-party organisation, external agency such as national assessment centre)
11. Environment	Face-to-face (individual or group)	Online (using digital tools)	
12. Location	Classroom at VET institution	Laboratory, workshop etc. at VET institution	Workplace
13. Authenticity	Low degree of authenticity (e.g. written examination in the class room)	Some degree of authenticity (e.g. assessment based on simulation of real working-life situations in VET institutions)	High degree of authenticity (e.g. assessment in the work context)
14. Standardisation	Low degree of standardisation (e.g. assessment designed and implemented de-centrally in a flexible way)	Combined forms of assessment: some parts are standardised, other parts are not standardised	High degree of standardisation (e.g. assessment designed and implemented externally)
15. Assessors	Teachers	Trainers, workplace instructors or other labour market stakeholders	External agencies
16. Learner involvement	No involvement of learners	Peers (peer assessment)	Candidate (self-assessment)

NB: This table is the continuation of Table 4.

Source: Cedefop.



## 2.6. Alignment of learning outcomes, delivery and assessment

Assessment in IVET can be analysed from different perspectives, which can usually be traced back to specific learning theories, such as (James, 2006): behaviourist theories of learning, cognitive, constructivist theories of learning, and socio-cultural, situated and activity theories of learning. James (2006) argues that consistency between assessment practice and beliefs about learning is important since change in one almost always requires a change in the other. According to her observations, however, ‘assessment practice is sometimes out of step with developments in learning theory and can undermine effective teaching and learning because its washback effect is so powerful, especially in high stakes settings. It would seem therefore that alignment between assessment practice and learning theory is something to strive for’ (James, 2006, p. 11).

As outlined in previous studies (e.g. Auzinger et al., 2017; Cedefop, 2022a; Luomi-Messerer et al., 2019), ‘reference documents’ that set out the intended learning outcomes of a qualification are key sources for data on national qualifications and are also instruments to inform curricula, programmes and assessment standards. Intended learning outcomes are included, although not in all cases: instead, educational objectives or goals to be achieved, which are to be interpreted by the teachers, could be stated. They are increasingly being used to describe qualifications: ‘IVET qualifications at EQF levels 3 and 4 are increasingly described in learning outcomes: this applies to the whole qualification and parts of it, as in modules or subjects in almost half of IVET qualification types analysed. The evidence suggests that, in most cases, learning outcomes are generated from occupational standards/profiles agreed with labour market stakeholders. Together with other sources and standards, these inform the development of educational standards and curricula’ (Cedefop, 2020b, p. 13). These reference documents are of different nature and serve different functions ‘ranging from expressing a close relationship to the labour market to making a closer link to education delivery’ (Cedefop, 2020c, p. 29).

Assessment standards, criteria, methods and tools explicitly or implicitly express key objectives of VET since they give ‘signals about what learning is important, and what aspects of learning merit and require more time and effort’ (Siarova et al., 2017, p. 34). Thus, they are directly influencing the actions of teachers and trainers as well as learners since they pay close attention to the explicit and implicit ‘de facto’ priorities set by tests and examinations. Changes in assessment structure teaching priorities and methods, and in turn, impact what learners learn and how they learn (Siarova et al., 2017, p. 34). Siarova et al. (2017) therefore emphasise that it is crucial that learning outcomes and assessment

methods are clearly defined, and that assessment practices are aligned with curricula and overall education policy.

In the development of qualifications and learning programmes, it is generally important that there is consistency between intended learning outcomes, the delivery model (particularly teaching and learning methods, the pedagogical approach) and assessment criteria. This is seen as increasing transparency for all stakeholders and supporting meaningful and effective learning. In higher education, Biggs (2003) has coined the concept of 'constructive alignment' to characterise such an approach (see also Cedefop, 2017, pp. 40; 56-57) <sup>(24)</sup>. This alignment is also a basis for asserting the validity of assessments (see Chapter 2.7). For example, Pellegrino et al. (2016, p. 4) use the term 'instructional validity' to describe 'the extent to which an assessment is aligned with curriculum and instruction, including students' opportunities to learn, as well as how it supports teaching practice by providing valuable and timely instruction related information'.

For this study it is of particular interest to explore to what extent and how, for example, the strengthened emphasis on transversal skills or on work-based learning across Europe is reflected in the qualification standards, in the training delivery and also in the assessment practices.

That such alignment is not always the case in IVET is observed in the recent study on *Key competences in VET* (Cedefop, 2020c): while attention is paid to the key competences analysed <sup>(25)</sup> in the delivery of programmes, they are less often reflected in the reference documents (description of learning outcomes and educational objectives) and assessment standards and the specific proficiency levels are less often formulated, nor specifically assessed. The TRACK-VET project made similar observations: 'However in the case of TKCs more often than not, we see lack of alignment: these competences are not well represented in curricula, not assessed and taught/ learned informally' (Dębowski et al., 2021, p. 27).

A reason for this could be that assessment of IVET qualifications is often decentralised and dominated by the assessment of occupation-specific competences. A lack of consistency between the ways learning and assessment are approached may also be due to certain trends being pursued simultaneously.

---

<sup>(24)</sup> Renold et al. (2015) (see also Bolli et al., 2018; Rageth and Renold, 2017; Rageth and Renold, 2020) have developed the curriculum value chain (CVC) model. The UNESCO International Bureau of Education uses the term '[curriculum alignment](#)': 'A process aimed at ensuring coherence and consistency between the intended outcomes as specified in the formal curriculum and teaching methods, assessment tasks, and learning activities in the classroom'.

<sup>(25)</sup> The study focused on three key competences: literacy, languages (multilingual) and digital.

For example, a trend towards individualised learning may coincide with a trend towards centralised assessment.

However, the alignment between the intended learning outcomes, the learning process, and the assessment criteria can also have a negative impact on the teaching and learning process: if the latter is too closely aligned with the learning outcomes set out in the curriculum and assessment specifications, teaching and learning can be constrained. While assessment of learning (for certification) generally takes place at the end of a teaching-learning sequence, looking at specified assessment criteria at the beginning might prompt learners and teachers to focus on specific aspects only, i.e. on those learning outcomes that will actually be assessed ('teaching/learning to the test'). This approach has also been coined as 'assessment as learning' where assessment dominates decisions about content and learning processes and where the emphasis is on meeting criteria at the expense of learning (Carter and Bathmaker, 2017, p. 471) <sup>(26)</sup>.

To conclude, how learners are assessed can shape the learning process for better or for worse. Assessment is a powerful tool to improve teaching and learning. Conversely, its poor use can significantly weaken this process. Most of the traditional assessment approaches relate to subject knowledge and skills, not to those cross-curricular key competences that are equally important (Psifidou, 2014, p. 148), and which continue to gain more social and economic relevance <sup>(27)</sup>.

Table 6 presents the 'alignment' dimension and the features identified in this area.

Table 6. **Features identified in relation to the 'alignment' dimension**

Dimensions	Features		
17. Alignment	Overall strong alignment between intended learning outcomes, delivery model and assessment	For some parts of the qualification/programme there is a strong, for others a loose alignment between intended learning outcomes, delivery model and assessment	Overall loose alignment between intended learning outcomes, delivery model and assessment

NB: This table is the continuation of Table 6.

Source: Cedefop.

<sup>(26)</sup> The introduction of too concrete and specific outcome statements can harm learning processes by reducing them into measurable and delimited objects (Allais, 2014 – Cedefop, 2017, p. 38). Such a 'reductionist' approach can be avoided by using not only summative assessment but also formative assessment methods that enable learners to reflect on progress in relation to intended outcomes and thereby supporting the learning process (see Cedefop, 2017, p. 59).

<sup>(27)</sup> The change towards an increasing focus on transversal skills is explored in WA1.

## 2.7. Assessment quality and key characteristics

### 2.7.1. Key technical characteristics

Quality of assessment (methods, tools and instruments) is important for establishing trust in VET and is often defined by the following key technical characteristics: validity, reliability, and impartiality and fairness (see e.g. Cedefop, 2015a; Soland et al., 2013; Stenström et al., 2006). In order to consider and address them empirically in this study, they first need to be defined and operationalised. The following sections aim to unpack these concepts.

Validity ensures that assessment approaches measure as precisely as possible the intended learning outcomes and that evidence fully supports the assessment. Different types of validity, which need to be addressed and satisfied in assessment processes, are frequently distinguished in literature on assessment: face, content, criterion related, construct, and consequential validity. They are introduced briefly in the following paragraphs (Gillis and Batemann, 1999, pp. 9; 12-13).

- (a) Face validity refers to how relevant or appropriate an assessment appears, i.e. whether the assessment tasks are designed to look like they are assessing what they claim to be assessing. For example, 'authenticity' could be considered as providing evidence of the face validity of workplace assessments.
- (b) Content validity refers to the extent to which the skills and knowledge covered by the assessment method and tool constitute a representative sample of the required learning outcomes (as stated in assessment standards or specifications); it 'refers to a phenomenon (for example tasks or skills) which can be directly and unambiguously observed' (European Commission and Cedefop, 2021, p. 5) by using appropriate assessment methods and tools.
- (c) Criterion-related validity refers to how well the assessment measures what it intends to measure and includes the following aspects:
  - (i) concurrent validity refers to the comparability and consistency of a candidate's assessment results with other related proficiency measures;
  - (ii) predictive validity refers to 'the ability of the assessment outcomes to accurately predict the future performance of the candidate and how the candidate will be able to apply the knowledge and skills to new or other situations outside the context of the assessment event (i.e. transferability)' (Gillis and Batemann, 1999, p. 12) <sup>(28)</sup>.

---

<sup>(28)</sup> This is related to 'inferential validity' which is – according to the classification of validity provided by Pellegrino et al. (2016, p. 4) – 'concerned with the extent to which an

- (d) Construct validity refers to the extent to which certain psychological attributes, or constructs that are not observable as such, are actually represented by performance in the assessment; it entails gathering evidence to determine whether the assessment actually measures the attributes it is intended to measure or whether it is unintentionally influenced by other factors. It is concerned 'with the theoretical evidence of what is being assessed. Constructs are non-observable qualities, such as attitudes and values, competencies and learning, which require inferences to be made by the assessor. A construct is a way of organising observations to help interpret them. Without construct validity, content and criterion validity are not possible' (Gillis and Batemann, 1999, p. 13). Construct validity 'measures performance indirectly and in relation to a theoretically constructed reference. A good example of this is 'intelligence' but 'basic' and 'transversal skills' like communication, cooperation, creativity and learning to learn' (European Commission and Cedefop, 2021, p. 5). Pellegrino et al. (2016, p. 4) also emphasise the importance of 'cognitive validity' which refers to 'the extent to which an assessment taps important forms of domain knowledge and skill in ways that are not confounded with other aspects of cognition such as language or working memory load (the construct)'.
- (e) Consequential validity refers to the requirement that the interpretation of the evidence gathered in the assessment process should not be influenced by the perceived intended or unintended consequences of the assessment decision.

Particular attention needs to be paid to the issues related to content and construct validity of the assessment: 'Overlooking this distinction may create a bias towards the easily observable tasks and skills, and away from the more complex (and sometimes more important) underpinning competences' (European Commission and Cedefop, 2021, p. 5). They are also crucial in this study as these aspects are closely linked to the research on the changing content and profile of VET in the first part of the overall study (Cedefop, 2022b). This research paper specifically addresses issues related to the changing balance between occupation-specific skills, general subjects and transversal skills as the content of VET, as well as the role of research-based knowledge in IVET. It examines the extent to which changes in the content and profile of VET have influenced assessment. For example, content validity could be attested if an increased emphasis on transversal skills in VET programmes and qualifications were reflected in assessment standards and criteria. Construct validity could be attested if, in this case, the

---

assessment reliably and accurately yields model-based information about student performance, especially for diagnostic purposes.'

assessment designed to measure the construct ‘transversal skills’ really provides evidence that it actually measures transversal skills.

Reliability of an assessment relates to the ‘degree of stability, consistency and accuracy of the assessment outcomes’ (Gillis and Batemann, 1999, p. 10), to the extent to which test results are reproducible. Reliability is influenced by the assessment instruments (the tasks to be performed, the questions to be answered) as well as by the interpretation of the assessment results. Here, too, different types can be distinguished, but – in contrast to ensuring the validity of assessment – they do not all have to be fulfilled at the same time (Gillis and Batemann, 1999, p. 14):

- (a) inter-rater reliability between assessors refers to the extent to which different assessors using the same assessment methods, tasks, etc. reach the same judgement on the same candidate;
- (b) intra-rater reliability within assessors refers to the extent to which assessment outcomes across time and location are consistent when the same assessor uses the same assessment methods, tasks, etc. on the same candidate;
- (c) parallel forms reliability across tasks refers to the extent to which consistent results are obtained when two alternative (but equally difficult) forms of a task, two different assessment tools or sets of questions are used to assess the same candidate (for this, it is crucial that both versions relate to the same construct or knowledge, skills and competences);
- (d) internal consistency reliability refers to the extent to which different test items or sub-tasks act together to produce a consistent form of performance.

Reliability of assessment can be achieved in different ways and for different reasons. The degree of reliability is also influenced by many factors, especially those described in the previous sections. For example, if assessment criteria, methods, and instruments are used that do not adequately reflect the intended learning outcomes, this will lead to problems related to the reliability of the assessment. Factors such as the assessment environment and context are important for reliability, as are the number of questions and the way they are asked, and the way examiners are trained.

Impartiality and fairness consider the diverse background of VET learners when designing and implementing assessment and ensure that it is not unequal on any grounds (e.g. related to language, cultural and social background, gender). There is evidence ‘that specific assessment methods do not impact women and men equally. For instance, not all learners perform equally well with multiple choice tests: females tend to do less well than males. As elaborated by a 2018 Stanford University study, the test format accounts for 25% of the gender difference in performance in reading and maths. Some hypotheses for these differences include that when it comes to high-stake tests girls will tend to guess less due to risk

aversion, again a product of socialisation' (Lifelong Learning Platform, 2021, p. 28). Impartiality also means that personal views or feelings of the assessor have no influence on the assessment. Ensuring impartiality and fairness in assessment across learners and providers is considered one of the key challenges of current education and assessment policies. This relates to the social function of assessment: the need to consider differences between learners and allow for the validation of multiple means of demonstrating the acquisition of learning outcomes, while maintaining the same level of requirements for learning expected from all learners (Siarova et al., 2017).

Transparency in assessment is also an important element in this context and related to fairness, as it ensures that all aspects concerning the specific assessment (e.g. methods, tools, criteria, implications and consequences of results) are known by all the parties involved in assessment, particularly by the candidates. Transparency in assessment, for example, ensures that candidates know and understand the criteria for assessment, what they need to achieve and what kind of evidence is used or they need to provide to confirm or demonstrate the achievement. In this way, transparency can help to support learners' ownership of their learning process. Further, transparency of assessment is a prerequisite to ensuring alignment between intended learning outcomes, teaching, learning and assessment (see above).

#### **2.7.2. Balancing of quality elements**

It is clear that assessment methods or procedures cannot generally be assessed as valid, reliable, fair or not; this always depends on the specific objective and context of the assessment. Since validity and reliability are closely related characteristics of assessment and not independent of each other, trade-offs between them must also be considered. While a low level of reliability entails a low level of validity, an improvement in reliability does not always lead to improved validity. This is the case, for example, with forms of authentic assessment (e.g. at the work place), where some flexibility is needed to ensure validity, but compromises may have to be made in terms of reliability. However, a 'highly valid assessment must, by definition, be relatively reliable, since a very inconsistent measure cannot yield accurate predictions of occupational competence' (Field, 2021, p. 8).

Another important aspect to consider is that assessment methods must be manageable and scalable while maintaining their validity, reliability, and fairness. This also implies that the costs required for the design and implementation of the assessment must be taken into account. For example, assessment approaches that offer a high degree of validity may not only present problems of reliability, but

may also be very costly (as with multiple performance assessments in authentic contexts with teacher and trainer observations followed by reflective discussions). Highly standardised computerised multiple-choice tests are potentially scalable, as they can be used for large numbers of learners, and less costly, but may have validity problems.

An appropriate balance must be struck between each element of quality, while also considering trade-offs and aspects of manageability, scalability, and cost. Achieving effective assessment practices that take these key aspects of quality into account also requires 'assessment competence or literacy' (expertise in assessment) as well as evaluation of assessment practices (including standards, criteria, tasks, materials) in order continuously to improve practices (see also Cedefop, 2015a) <sup>(29)</sup>.

## 2.8. Analytical framework: focus on assessment

Table 7 reflects the application of the overall analytical framework for this study but with a focus on assessment; it adds specific sub-dimensions, features and variants related to this topic as discussed in the previous sections. The dimensions related to quality of assessment (validity, reliability, impartiality and fairness) are not included in this table as they are considered as 'transverse' features.

Table 7. **Focus on assessment**

Dimensions		Features		
A. Purposes and functions	1. Purpose of assessment	Assessment for learning (formative assessment)	Assessment of learning (summative assessment)	Assessment for qualification and certification (specific form of summative assessment)
	2. Basis for awarding a qualification	Assessment of each component of a programme/qualification (i.e. accumulation of units, modules) without a final assessment	Assessment of each component of a programme/qualification (units, modules) and final (end point) assessment	Final (end point) assessment (separated from education and training process) only

<sup>(29)</sup> For example, based on a recent evaluation of apprenticeship end-point assessment materials in England (Ofqual, 2020), Newton (2021) noted that while 'assessment competence is needed, it is as rare as hen's teeth.'



Dimensions		Features		
B. Content	3. Types of learning outcomes	Occupation specific knowledge, skills and competences	Transversal knowledge, skills and competences	General knowledge subjects
	4. Integration or separation of different types of learning outcomes	Separate assessment of occupation-specific KSC, transversal KSC and general knowledge subjects	Partly separated, partly integrated assessment	Integrated assessment
	5. Learning contexts	Assessment explicitly includes learning outcomes from formal learning context only		Assessment explicitly includes learning outcomes from formal, non-formal and informal learning contexts
C. References	6. Basis of assessment	Norm-referenced assessment		Criterion-referenced assessment
	7. Reference points to support summative assessment	Assessment specifications and standards are not explicitly defined	Assessment specifications and standards are explicitly defined, but only at a general level	Assessment specifications and standards are explicitly defined and translated into assessment criteria, formulated to specify and articulate different levels of performance /mastery/ achievement
	8. Sources/ methods for collecting evidence related to theoretical knowledge	Written test		Oral test
D. How: Methods, tools	9. Sources/ methods for collecting evidence related to practical knowledge	Direct evidence (e.g. observations – skills demonstrations at workplaces, simulation exercises, role plays; oral questioning – reflections and justifications of actions or decisions)	Indirect evidence (e.g. review of work samples or products)	Supplementary evidence (e.g. third-party feedback, work diaries)
	10. Internal/ external	Internal assessment (e.g. teachers from the VET institution)	Both internal and external assessment	External assessment (e.g. third-party organisation, external agency such as national assessment centre)
	11. Environment	Face-to-face (individual or group)		Online (using digital tools)
	12. Location	Class-room at VET institution	Laboratory, workshop etc. at VET institution	Workplace

Dimensions		Features		
	13. Authenticity	Low degree of authenticity (e.g. written examination in the class room)	Some degree of authenticity (e.g. assessment based on simulation of real working-life situations in VET institutions)	High degree of authenticity (e.g. assessment in the work context)
	14. Standardisation	Low degree of standardisation (e.g. assessment designed and implemented de-centrally in a flexible way)	Combined forms of assessment: some parts are standardised, other parts are not standardised	High degree of standardisation (e.g. assessment designed and implemented externally)
	15. Assessors	Teachers	Trainers, workplace instructors or other labour market stakeholders	External agencies
	16. Learner involvement	No involvement of learners	Peers (peer assessment)	Candidate (self-assessment)
E. Alignment	17. Alignment	Overall strong alignment between intended learning outcomes, delivery model and assessment	For some parts of the qualification/programme there is a strong alignment, for others a loose one, between intended learning outcomes, delivery model and assessment	Overall loose alignment between intended learning outcomes, delivery model and assessment

Source: Cedefop.

Using the example of assessment, this approach is an attempt to illustrate how specific topics can be dealt with in detail while maintaining the link to the overall analytical model (Cedefop, 2022, forthcoming-d). The extended three-perspective model includes assessment as one of the dimensions in the epistemological and pedagogical-didactical perspective (Cedefop, 2022, p. 23). Some of the dimensions and features presented in the table can also be linked to the other two perspectives, mainly including:

- (a) external assessment and high degree of standardisation could also be seen in relation to the education-system perspective, e.g. as part of governance arrangements;
- (b) assessment in the workplace and a high degree of authenticity of assessment can have signalling functions for the labour market and therefore also considered from the socioeconomic/labour market perspective.

This exercise shows that, while assessment is addressed in all three perspectives, the majority of the indicators belong to the epistemological and pedagogical-didactical perspective. It therefore seems justified to include assessment in the three-perspective model as a dimension as part of this perspective. The table and the discussions above show that assessment practices can be analysed from different perspectives, taking into account different dimensions and features <sup>(30)</sup>. This table can also be used as a reflection tool in the design of assessment <sup>(31)</sup>. Which feature is chosen for each dimension in the design of assessment depends, at least in part, on the purpose of the assessment, what it is used for: 'In part, these choices may be determined by the varying objectives of different assessments, which might include demonstrating occupational competence to employers, or proving the capacity to pursue further learning, or motivating students. So the function of assessment determines its design: an intellectually demanding knowledge-based exam may impress a university, but not help to persuade an employer of an individual's ability to tackle the messy realities of day-to-day working life' (Field, 2021, p. 1).

The dimensions presented in the table on assessment are used to structure the discussion of the trends in assessment in IVET as identified in the literature review and in the empirical activities of the project (Chapter 3).

---

<sup>(30)</sup> The table in the Annex illustrates which dimensions and features are relevant in each case to answer the different key research questions.

<sup>(31)</sup> For a discussion on choices, and potential dilemmas, arising in the design of assessment see Field (2021).

## CHAPTER 3.

# Trends in assessment

This chapter presents trends in assessment in IVET (in the countries covered by this study) during the past 25 years and refers to findings presented in relation to the discussed dimensions of assessment (Chapter 2, Table 7). The research results provide insights into the changes regarding assessment approaches in VET in the past and expected developments in the future. However, it was not possible to address all dimensions and features in detail: while the case studies allow for a more in-depth analysis of selected dimensions and developments, they only cover a limited number of topics and countries. It is not possible to provide details on every dimension of the analytical framework for all countries and for all VET programmes and qualifications. Also, while a fine-grained distinction is useful for the analytical framework, several of the dimensions and features included in the analytical framework overlap. For example, the ‘authenticity’ dimension is linked to the ‘location’ dimension of the assessment, or the ‘internal/external’ dimension is linked to the ‘standardisation’ dimension of the assessment. We have deliberately chosen to accept these overlaps. However, to avoid repetition that would arise if each of these dimensions were treated separately, the results for closely related dimensions are presented together.

### 3.1. Introduction

As education in general, and VET systems in particular, are influenced by and responsive to external drivers as well as policy or ideological considerations (see discussion in Cedefop, 2022b), assessment practices are also influenced by various factors and trends, such as social, demographic, economic, environmental, and technological trends and developments (see e.g. OECD, 2019). Assessment is particularly influenced by changes related to educational principles and practices. For example, a shift towards competence-based approaches in VET requires rethinking existing pedagogical and instruction practices, moving towards a learner-centred approach and personalisation of learning, employing methods such as collaborative or experiential learning.

Factors that potentially shape the evolution of assessment in VET include the broadening of the skills and competence base of IVET, with strengthened emphasis on general subjects and greater focus on transversal skills and competences; changes in the organisation and delivery of IVET and the

development towards combined and hybrid institutions are also important. Some indications point to increased standardisation which could be linked to a growing emphasis on accountability. Another influencing factor is the vast technical developments and digitalisation <sup>(32)</sup> and the upskilling and reskilling needs of adults that are gradually driving authorities and providers to open up to new groups of learners (see Cedefop, 2022, forthcoming-d).

Research on assessment in VET points to different aspects of reform processes and changes related to assessment approaches. As summarised by Segers et al. (2006), ‘new directions in assessment regarding a shift from decontextualization to authenticity, from single to multiple measurements, from a low to a high assessment of comprehension, from assessing a few to assessing many dimensions of intelligence, from the separation to the integration between assessment and learning processes, and from the idea that assessment is teacher-directed to the notion of student’s responsibility in evaluation. Wiggins (1998) affirms that assessments need to be characterised by students’ active engagement, exploration, and inquiry’ (Dębowski et al., 2021, p. 73). Stenström and Laine (2006a, p. 11), for example, compare central features of ‘traditional’ assessment and ‘practice-oriented assessment’ in VET, as presented in Table 8.

Table 8. **Features of ‘traditional’ assessment and ‘practice-oriented assessment’ in VET**

Traditional assessment	Practice-oriented assessment
Emphasises quantitative assessment (*) Repetitive, emphasises rote learning	Emphasises qualitative assessment (*) Emphasises connectivity between theory and practice and the transformation of knowledge
Artificial assessment settings	Assessment settings that are as authentic as possible
Assessment as separate from the learning process	Assessment as part of the learning process
Assessment by the teacher	Assessment by the teacher, the student and the workplace instructor together and also by other students (peer-assessment)?

(\*) Quantitative assessment refers to the assessment of learning with an emphasis on rote learning; ‘In qualitative assessment, by contrast, attention focuses on the quality of the knowledge presented by the student’ (Stenström and Laine, 2006b).

Source: Stenström and Laine (2006a, p. 11).

Continuing developments and innovation in education have the potential to improve the quality of assessment and better link it to the specific learning outcomes. Relevant competences, such as innovation competences and

<sup>(32)</sup> See e.g. European Commission (2020b). For digital forms of assessment of non-formal and informal learning see for example Looney (2019), Luomi-Messerer (2019).

vocational excellence in general, which are emphasised in recent policy documents, such as in the Council Recommendation on vocational education and training for sustainable competitiveness, social fairness and resilience (Council of the European Union, 2020) would need to be addressed in assessment policies in the future. However, as Psifidou (2014, p. 136) points out, despite ‘this growing emphasis on the importance of outcome-oriented approaches in curriculum design in European policy discourse, there is as yet no such European debate on assessment policies’.

This chapter explores the trends in assessment in IVET as observed in the empirical phase of this study. The following subsections are based on the dimensions of assessment (as discussed in Chapter 2 and presented in Table 7) and therefore refer to trends identified in the empirical investigation related to:

- (a) role and function of assessment;
- (b) content of assessment;
- (c) reference points used for assessment;
- (d) methods and context of assessment;
- (e) alignment between intended learning outcomes, delivery model and assessment.

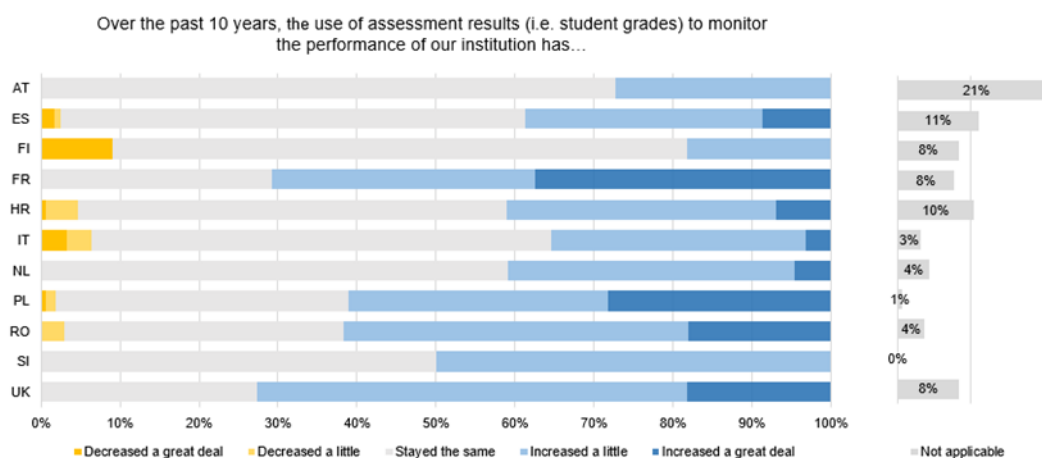
After a summary of the key trends observed with respect to these dimensions, there follows a subsection on specific developments related to quality aspects of assessment and a subsection on the impact of the COVID-19 pandemic on assessment.

## 3.2. Role and function of assessment

### 3.2.1. Assessment as part of quality assurance in VET

Assessment can have a role in national quality assurance systems in VET. The VET provider survey provides some insights into how the use of assessment results (i.e. student grades) to monitor the performance of VET institutions has changed over the past 10 years. Overall, there is a sizeable share of survey respondents who do not observe any changes in their countries in this regard. In half of the countries (France, Poland, Romania, Slovenia and the UK), 50% or more of the respondents indicate that the use of assessment results to monitor the performance of VET institutions has increased; this trend seems to be most pronounced in France and the UK. Figure 3 presents the survey results for the selected 11 countries.

Figure 3. **Change in the use of assessment results to monitor the performance of VET institutions**



Source: VET provider survey. Data from selected countries. n = 893 <sup>(33)</sup>.

In Poland, for example, the perception that the use of assessment results to monitor the performance of VET institutions has increased can be linked to the introduction of standardised external examinations, which also allow learners and parents to compare results between schools (Dębowski, 2022). Finland is among the countries with most respondents indicating that the use of assessment results to monitor the performance of VET institutions has stayed the same over the past 10 years. Finland had introduced external evaluation considering the learning outcomes of VET students already earlier: since 2007, evaluations of learning outcomes in VET have been conducted by the Finnish Education Evaluation Centre (FINEEC). 'The aim of the learning outcomes evaluations is to provide information on how successfully students achieve the learning objectives and vocational skills requirements defined in the qualification requirements. In addition, the aim of evaluation is to promote learning, develop education, and ensure the quality of VET' <sup>(34)</sup>. Each year, these evaluations are conducted for the learning outcomes of one to four qualifications; between 2007 and 2018, 28 vocational upper secondary qualifications were subject to evaluation. Assessment of learning outcomes in sustainable development was also implemented in 2014/2015. These

<sup>(33)</sup> Please note that when interpreting the survey results and the developments indicated (decrease, increase), it is always important to take into account the initial specific situation with regard to the relevant aspect in a country. Illustrations of survey results usually refer to change with regard to a specific question (along the dimensions of increase/no change/decrease), whereas options like 'don't know' and 'not applicable' have been displayed separately and excluded from the assessment. Thus, when referring to '50% of respondents' reporting an increase, we mean that 50% of those respondents who made an assessment on changes reported an increase.

<sup>(34)</sup> FINEEC (2021). [Learning outcomes evaluation](#).

evaluations focus on vocational skills and are based on vocational skills demonstrations and supplementary evaluation material, such as students' self-evaluations, self-evaluations of VET providers and workplaces, and evaluations of the quality of the demonstrations. Evaluation data related to common units and the key skills for lifelong learning is also produced. Education providers are required to provide relevant data, such as the number and places of skills demonstration or on the participants of assessment. The FINNEC website also indicates that, following the new legislation on VET from 2018, a new evaluation system has been developed. This was piloted in 2019 and 2020 and emphasises an interactive and multi-method approach. It has strengthened the role of students and workplaces in the production of assessment data. Evaluations also rely as much as possible on existing data repositories and data sets <sup>(35)</sup>.

Similar changes can also be observed in Lithuania. In 2020, a system for the external evaluation of training providers for improving the quality assurance system in VET was created; it was piloted in 2021 <sup>(36)</sup>. A national monitoring system for external assessment indicators is being developed. One of the indicators refers to the 'share of assessed students whose assessments for the theoretical and practical part of competences acquired are 'good' (eight points), 'very good' (nine points) or 'excellent' (10 points)' <sup>(37)</sup>.

### **3.2.2. Assessment for learning**

According to OECD (2013), there is increased policy attention to formative assessment (assessment for learning) while summative assessment (assessment of learning) and reporting remain important at key stages of education. Also, Psifidou (2014, pp. 144-145) points to a stronger emphasis on 'formative assessment in the context of learner-centred approaches and active learning' (e.g. in the Netherlands, Romania, Slovenia, and the UK-Scotland) and the use of assessment as a tool to inform and enhance students' learning is expected to be even more strongly emphasised in the future (European Commission, 2020a).

---

<sup>(35)</sup> FINEEC (2021). [Piloting the evaluation system in the vocational qualifications in logistics and social and health care and the further vocational qualification in the transport sector.](#)

<sup>(36)</sup> Last versions of the amendment of the law of vocational training in 2017 and in 2019 included provisions to bring the VET system closer to the needs of the State's economic development. One of these provisions related to the introduction of the quality assurance system of VET providers; these were obliged to implement internal quality assurance systems in order to conduct an annual self-assessment and publish the results of the assessment. An external institutional review must be carried out every 5 years.

<sup>(37)</sup> Cedefop; ReferNet Lithuania (2020). [Lithuania: setting up a system for external assessment of VET providers in formal IVET and CVET.](#)



Moreover, the 2021 position paper of the Lifelong Learning Platform states that in 'the European landscape, the most prominent forms of assessment tend to be summative, formative and to a lesser extent diagnostic assessments' (Lifelong Learning Platform, 2021, p. 12) <sup>(38)</sup>.

Increasing emphasis on formative assessment in vocational education has been observed by Ecclestone et al. (2010) for the UK for the period 1980-2010, while other authors (Carter and Bathmaker, 2017, p. 462) trace this trend back to the 1960s. During the past 25 years, formative assessment also gained increasing prominence in other countries, such as Finland (Räsänen and Rökköläinen, 2014) and Norway (Tveit, 2014). In Finnish VET, strong emphasis on the formative assessment approach can be observed during the period studied (starting in 1995) and there is a traditional focus on combining formative and summative assessment of VET (Stenström and Laine, 2006a). In Malta and Croatia, relatively recent reform processes for strengthening formative assessment can be identified; these examples are presented in the following boxes.

**Box 3. *My journey: achieving through different paths: example from Malta***

In Malta, the secondary school reform *My journey: achieving through different paths* was introduced in the school year 2019/20 to move from a one size fits all system to a more inclusive and comprehensive equitable quality system (Ministry of Education and Employment of Malta (MEDE), 2016, p. 12).

It provides students at lower secondary level with the opportunity to select options/subjects (general/academic, vocational and applied) alongside their compulsory lessons. Nine vocational subjects are offered, leading to MQF/EQF Level 3, and are designed to support the educational engagement of learners who struggle with more academic subjects and are at risk of dropping out of school.

This is further strengthened by the focus on formative assessment: 'The progress of learners in the vocational subjects is not assessed through formal examinations but through ongoing assessment by the subject teacher, verified internally by a second subject teacher, and evaluated by an external verifier from the national assessment board'. Thus, the focus should no longer be on high-stakes, standardised and summative examination but different modes of assessment should be used with a balanced approach towards assessment of, for and as learning (Ministry of Education and Employment of Malta (MEDE), 2016, p. 12).

Source: Ministry of Education and Employment of Malta (MEDE) (2016).

<sup>(38)</sup> Strengthening of the latter can, for example be observed in France, as since 2019, some VET levels require students to undergo a positioning test in French and mathematics at the beginning of the year to tailor the support needed by students.

**Box 4. Assessment guidelines strengthening formative assessment in VET: example from Croatia**

In Croatia, the *Guidelines for the evaluation of learning processes and achievement of outcomes in primary and secondary education, including VET* were published in 2020 as one of the results of the ESF-funded project *Support for the implementation of comprehensive curricular reform*. The document defines important terms and describes different approaches to the assessment of students' learning processes and the achievement of learning outcomes. The guidelines advocate for complementarity and balanced use of evaluation of what has been learned with approaches aimed at systematic monitoring and assessing the learning achievements. They focus on encouraging and providing insight into learning, identifying strengths and weaknesses in learning, and planning for future learning and teaching. These approaches do not lead to the assignment of student grades but focus on providing feedback and sharing experiences about learning processes and the acquisition of knowledge and skills related to the predefined educational outcomes set out in the curricula (Croatia. Ministry of Science and Education, 2020a).

The guidelines clearly describe three different approaches to assessment:

- (a) assessment for learning;
- (b) assessment as learning;
- (c) assessment of learning/acquired knowledge.

The first two approaches are used for improving learning and teaching methods. Assessment of acquired knowledge is used to assess and report on achievements and progress at the end of a specific training period (e.g. completed teaching topic; teaching unit; study semester; study year) in relation to the learning outcomes set out in the curricula.

Source: Pavkov (2022).

While formative assessment is emphasised in many recent policy documents, it is not always clear to what extent this is put into practice. A publication of the Educational Council from the Netherlands (Netherlands. Onderwijsraad, 2018), for example, points to an imbalance between formative and summative assessment, as current practice insufficiently allows formative assessment (Broek, 2022). In the Austrian school-based VET system it has also been observed that summative assessment is still the dominant form while more formative performance diagnoses seem to be in the minority (Lachmayr and Proinger, 2020, p. 33). An increase in formative assessment was triggered, however, by the introduction of the compulsory work practice for all school-based IVET types. With this development, the assessment of work practice was also made compulsory: it is assessed through portfolios, which are otherwise used only sporadically (Lachmayr and Proinger, 2020, p. 30). The new quality management system (QMS), introduced in 2021 and to be rolled out completely by 2024 for all Austrian schools (general education and VET), also more strongly emphasises formative forms of assessment. The QMS, contrary to the former quality system for VET, now includes more elaborate details

for (formative and summative) assessment, which are described in Box 5. It remains to be seen how these principles will translate into teaching and assessment practice.

**Box 5. Quality guidelines for assessment in Austrian schools**

The quality management system (QMS) for Austrian schools lays down the following principles regarding determining and assessing performance: performance assessment and criteria for performance assessment are known, comprehensible and correspond to the legal basis.

**Teachers:**

- agree on criteria for assessment of performance based on the curricula and the *Leistungsbeurteilungsverordnung* (assessment regulation);
- use various methods of learning-accompanying performance assessment and thus record the acquisition of competences and the learning progress of the learners;
- regularly communicate the expected performance and the criteria for performance assessment to learners and legal guardians, thus ensuring transparency;
- use the assessment criteria as a basis for a transparent and competence-oriented assessment of learners' performance;
- continuously document the level of performance and learning progress of the learners and thus enable systematic, individual learning development advice in cooperation with the learners;
- regularly inform the learners and their legal guardians and – in case of vocational schools for apprentices – also authorised trainers about the level of performance and the learning progress and thus ensure transparency;
- justify their performance assessments to the learners and legal guardians;
- use the results of the internal performance assessment and external performance measurements as an opportunity to review and further develop the teaching design.

**School administrations:**

- ensure suitable framework conditions and structures so that the teachers can agree on criteria for the performance assessment based on the curricula and the assessment regulation;
- ask teachers based on the results of the internal performance assessment and external performance measurements to review and further develop their teaching design;
- demand transparent and comprehensible performance assessment from the teachers;
- support inquiries from legal guardians regarding the performance assessment and help to clarify;
- clearly communicate performance expectations and continuous feedback on the learning process, essential for a beneficial learning culture.

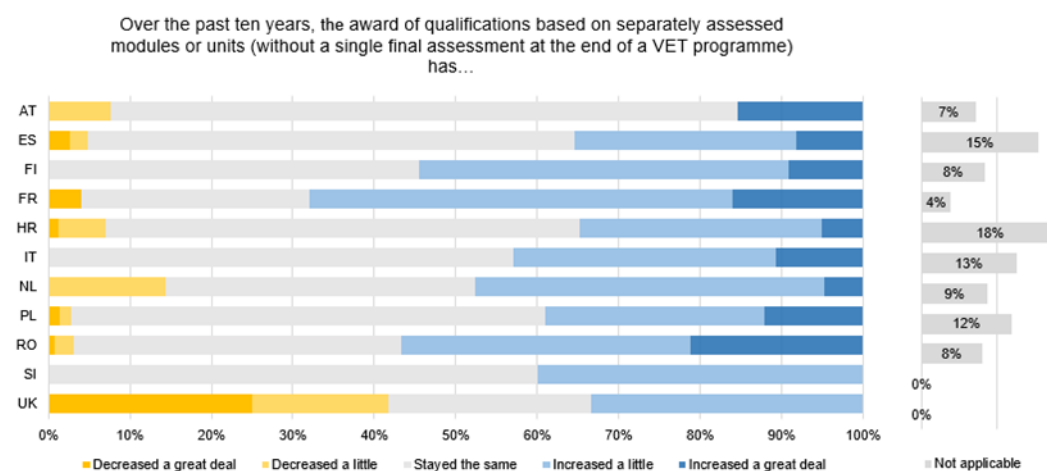
Source: QMS (2022); own translation.

### 3.2.3. Basis for awarding a qualification

The study on *The changing nature and role of VET* (Cedefop, 2020e) identifies the increasing use of modular approaches as a trend in both IVET and CVET: ‘Modularisation of programmes at upper secondary level and for adults has also been a feature, opening up the possibility of increasing the flexibility of VET and enabling more individualised pathways, for example in terms of the sequence in which modules are taken. [...] Opportunities to choose, accumulate and combine separate modules will improve accessibility and attractiveness of learning both for young persons and adults. The possibility to take parts of qualifications – rather than full qualifications – has also been developed’ (Cedefop, 2020e, pp. 47-48).

Psfidou (2014, pp. 144-145) pointed to trends related to ‘the tendency to organise assessment in a progressive and more flexible way rather than at once’ and results from the VET provider survey also provide some insight into changes related to the award of qualifications based on separately assessed modules or units. While an increase in this regard has been identified in all 11 countries, only for three (Finland, France, Romania) have more than 50% of respondents confirmed that this has increased over the past 10 years, as Figure 4 illustrates. This might be partly explained by the different starting points of countries regards modularisation in VET.

Figure 4. **Changes related to the award of qualifications based on separately assessed modules or units**



France and Finland are among the countries where there has been a greater focus on the assessment of units in recent years.

In France, since the law of 5 September 2018, qualifications registered in the French National Register of Professional Qualifications (*Répertoire national des certifications professionnelles*, RNCP) must be composed of units or blocks of

competences (*blocs de compétences*): blocks of general competences or blocks of professional competences are each evaluated by an examination.

They are defined as: 'homogeneous and coherent sets of competences that contribute to the autonomous exercise of a professional activity, which can be evaluated and validated' (France Compétences, 2021, p. 6). These blocks of competences were created by a law in 2014, implemented by a series of decrees that made changes to the professional diplomas linked to EQF levels 3 and 4 (which became effective with the 2016 academic year) and became mandatory in 2018 (France Compétences, 2021, p. 20).

In Finland, there has been a shift at the level of the national core curriculum from holistic target setting to a greater focus on the targets required for the assessment of the different units: the role of assessment has become stronger. This development has led to a more detailed and explicit definition of the sub-goals to be achieved for each unit's level of performance, and there are no final examinations or final project assignments (Finland, National Agency for Education, 2018; Rintala and Nokelainen, 2019). Until 1999, final projects were completed as part of IVET qualifications. When vocational skills demonstrations were introduced after a trial period starting in 2006, they were used in IVET only in the context of assessing individual learning units and not for whole qualifications or larger parts of qualifications (Virolainen, 2022).

In Poland, curricula are composed of smaller parts that are assessed separately; however, a slightly different approach is taken from those mentioned above. In 2012, core VET curricula based on learning outcomes (where learning outcomes are grouped into units) and the concept of qualification were introduced. The core curriculum in a given occupation is divided into three or two qualifications; sometimes only one qualification is used. This means that a learner has to pass three, two or one external VET examination(s) to obtain a VET diploma (depending on the occupation). After successful completion of all subjects, learners receive a school-leaving certificate and a VET diploma for passing (externally organised) VET examinations. When a learner has obtained the school-leaving certificate and all the required VET certificates, the VET diploma can be awarded. VET certificates are treated as partial qualifications, while VET diplomas are treated as full qualifications, and both are referenced to the NQF.

For UK-England, a high number of survey respondents referred to a reduction in the award of qualifications based on separately assessed modules or units. This might be linked to the introduction of apprenticeship standards that require a substantial change in assessment procedures: the end point assessment, carried out by end point assessment organisations, is the means by which completion of an apprenticeship will be determined. This replaces the previous system

(apprenticeship frameworks) which was a mix of completing a qualification and on-going assessment of competence. This development is in line with earlier observations and the assumption that the UK wants to move more in the direction of German vocational training. Under frameworks, apprentices were assessed at various stages of their training with no overall assessment at the end. Standards, in contrast, are occupation- rather than qualification-focused and designed by groups of employers. An assessment is carried out at the end of the apprenticeship to assess whether the apprentice has acquired the skills required for successful practice in an occupation. There is not necessarily a qualification award, though many standards incorporate one.

Developments towards more holistic final assessments can also be observed in Hungary. Since 2013 (based on the new VET Act approved in December 2011), modular exams have been gradually replaced by complex vocational exams: the holistic examination covers the entire qualification with exercises specific to each qualification (Luomi-Messerer et al., 2015, p. 75).

Changes related to the final assessment can also be observed in some other VET systems. In Austria and Germany, reforms have been introduced that offer the opportunity to take the final apprenticeship examination, which is usually taken at the end of the apprenticeship training as a comprehensive exam, in two parts:

- (a) in the Austrian dual system, based on the amendment to the Vocational Training Act in 2011, extended access to the apprenticeship-leave exam is possible. The practical apprenticeship-leave examination can be taken in two parts: the first part comprises identification of candidate's already acquired competences while in the second part he/she is required to prove any still outstanding competences (Luomi-Messerer et al., 2015, p. 75);
- (b) in the German dual system, based on the amendment to the Vocational Training Act in 2005, the extended final examination was introduced. One part of the professional competence is tested after around two-thirds of the training period and the second part of the final examination takes place at the end of the vocational training: competences covered in the first part will be included in the second part only to the extent required for the assessment of professional proficiency (Luomi-Messerer et al., 2015, p. 75).

#### **3.2.4. Conclusions**

There is both greater emphasis on formative assessment and continuing focus on summative assessment approaches. The latter does not only or necessarily refer to overall assessment at the end of training; it can also refer to assessment of individual units or modules, which is often used to increase the flexibility of learning pathways. A kind of pendulum movement can be observed: formerly highly

modularised VET systems become more holistic, others more modularised. Summative assessments are also increasingly being used in some countries to monitor the performance of VET institutions as part of quality assurance in VET. The identified roles and functions of assessment are not mutually exclusive and can be applied in parallel; assessment generally increases because different functions are to be fulfilled. Thus, we see an expansion of the function of assessment.

### 3.3. Assessment content trends

#### 3.3.1. Assessment of transversal skills and competences

The OECD (2013) observes that national curricula increasingly emphasise key competences for lifelong learning and are seeking to adapt their assessment systems in order to capture such broader types of learning. A European study on key competences (Cedefop, 2020c, p. 17) points out that policies ‘embedding key competences into IVET are found to contribute to observable changes in programme delivery, reference documents, teacher/trainer training and assessment standards’.

Cedefop (2022b) also clearly points to greater emphasis on transversal skills in VET programmes and qualifications in many countries over recent years <sup>(39)</sup>, while most survey respondents believe that transversal or soft skills will increase in the coming years. This assessment is particularly strong in Italy, Slovenia and Austria, where over 90% of respondents believe that the emphasis will be increased in the future (Cedefop, 2022b, p. 84).

The current study is interested to see to what extent transversal skills that are included in qualifications, programmes and curricula are also included in assessment standards and addressed in assessments.

The Cedefop (2020c) study on key competences focused on digital competence, multilingual competence, and on literacy; it revealed that the form of assessment used ‘may depend on how these competences are described in reference documents and included in the programme. For instance, they may be separate examinable units, or transversal and assessed together with other (more occupation-related) learning outcomes’ (Cedefop, 2020c, p. 32). It also revealed that these competences are not always assessed:

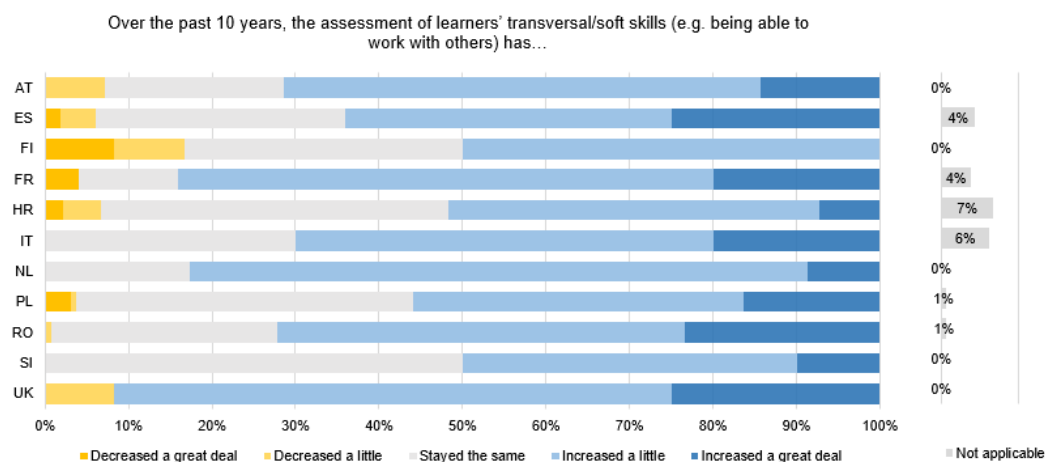
---

<sup>(39)</sup> For example in Austria, Croatia, Cyprus, Denmark, Estonia, Germany, Hungary, Italy, Latvia, Lithuania, Norway, Romania.

- (a) digital competence is assessed in 81% of the analysed 105 training programmes, the most common assessment methods being written (24%) and oral tests (20%);
- (b) multilingual competence is included in 87 of 105 programmes and assessed in 85; the most common assessment methods are also written (33%) and oral tests (30%);
- (c) literacy competence is included in the 78 qualification types that comprise IVET qualifications in the countries analysed as a stand-alone subject/module; however, it is not always stated in reference documents and not always assessed (Cedefop, 2020c, pp. 22-24).

Looking at the results of the survey of VET providers, respondents in almost all countries estimate that the assessment of learners' transversal/soft competences has increased over the past 10 years. This change seems to be most pronounced in France, the Netherlands and the UK, where more than 80% of respondents reported an increase in this respect. But it was also reported by 70% or more of respondents from, Italy, Romania and Austria.

Figure 5. **Change in the assessment of learners' transversal/soft skills**



Source: VET provider survey. Data from selected countries. n = 893.

In the Netherlands, transversal skills and competences (such as teamwork) are not centrally assessed, nor is there a systematic approach to assessing them in different occupational contexts. However, these competences are assessed in the real occupational context of the vocational student as part of the assessment of mastery of the general core tasks and work processes. For example, a healthcare assistant must demonstrate the ability to assist others with care tasks. This also requires that they are able to work in teams, communicate clearly and show empathy (Broek, 2022).



In 2016, a new revision of qualifications and curricula took place in Romania and qualifications were defined in terms of units of learning outcomes (knowledge, skills and attitudes). Key competences were integrated into technical general units and in technical specialised units. The revision of qualifications has led to greater emphasis on transversal skills and competences in the assessment process.

In Austrian IVET, key competences became a central theme with the introduction of new curricula in 1994. However, as analysed by Lachmayr and Proinger (2019), more cross-curricular competences are less visible in curricula and usually not assessed individually. An important trend affecting curricula and teaching is the focus on entrepreneurship since the beginning of the new millennium. These transversal competences are mostly assessed not only within the school subject, but also through school, city, region and even country-wide competitions in which almost all schools participate. In 2012, entrepreneurship was included in the AustrianSkills championships (Entrepreneurship team challenge) (Ifte.at, 2022).

The diploma thesis, as part of the standardised competence-oriented *matura* examination of Austrian colleges for higher vocational education (implemented in 2015/16) specifically aims to assess a wide range of transversal competences. For example, the diploma thesis can be set up as group work, with each member being responsible for a clearly distinguishable part or chapter(s). The assessment includes the achievement of each individual candidate, as well as its presentation and discussion. While the work submitted makes up the main part of the assessment (conclusiveness of the technical arguments, linguistic expression, documentation of practical work, formulation of the summaries), the development of the diploma thesis (e.g. need for support) as well as the presentation and discussion of the diploma thesis must also be included in the assessment (Germany. BMBWF, 2022a). To ensure the achievement of transversal skills and competences which are not explicitly addressed in summative assessment, assessment rubrics (assessment grids) for the diploma thesis were developed in such a way as to mirror all relevant transversal skills and competences and to guarantee a certain degree of transparency and standardisation. The grid – developed, piloted, evaluated and implemented in five phases from 2014 to 2016 – takes into account the development of the diploma thesis, the work submitted, its presentation and the discussion of the diploma thesis. The requirements for both professional and transversal competences are transparently documented by means of these rubrics (Lachmayr and Proinger, 2019). In secondary schools, the assessment grid for economic professions and tourism is based on four areas, with a total of nine competences, presented in Box 6.

**Box 6. Assessing the diploma thesis in secondary schools for economic professions and tourism in Austria**

The main part relates to the final product, the written diploma thesis, which makes up 70% of the grade and covers five competences:

- self-competence;
- content-related competence;
- information-related competence;
- linguistic competence;
- design-related competence.

The second area covers the project implementation, assessing the candidate's project management competence. For this area, competences include:

The candidate

- coordinates with team members;
- communicates in a goal-oriented way with their assessor / client;
- implements the planned project trajectory into the relevant tools correctly;
- fulfils the project objectives according to the assignment or coherently justifies the non-achievement of the objectives.

The third part relates to presenting the thesis, assessing structural and contextual competence, ability to express oneself and media competence. The fourth area assesses the candidate's ability to discuss the work's outcomes; an excerpt of a performance record for the presentation is given in the table below.

#	Field of competence	#	Dimension
	Display of results	1	The candidate is able to present results in a focused and correct manner.
		2	The candidate is able to use language as a tool for the display of results.
		3	The candidate is able to support the reception of results through the use of media.
		4	Time management

Assessors are asked to assess the work handed in based on each individual descriptor, which are bundled according to one of the nine competences. Individual areas are weighed as follows: written work 70%, project implementation 10%, presentation 10% and discussion 10%. Every candidate must personally present 'their' part of the thesis and answer questions concerning the thesis as a whole.

Source: BMBWF (2022a).

Polish survey respondents emphasised the change in the assessment of transversal/soft skills slightly less than respondents from other countries, although still more 55% referred to an increase in this context. A distinction needs to be made between internal (school-based) assessment and external assessment, as described in Box 7.

**Box 7. Assessment of transversal competences in VET in Poland**

**Internal assessment**

The internal assessment is conducted by the VET school teachers and is required for certificate of school completion. It does not only include the assessment of learning achievements in each subject but also refers to 'conduct' (*zachowanie*), which is a wide category relating to ethical and social conduct of a pupil and can be linked to transversal competences. Conduct is assessed on the following scale: excellent, very good, good, acceptable, unacceptable and inadmissible. The mark for behaviour, however, should not influence the mark given for subjects or the promotion to the next grade. The interim and annual classification of conduct includes the following basic areas (Stęchły et al., 2019):

- (a) adhering to student responsibilities;
- (b) acting in accordance with the good of the school community;
- (c) care for the school's honour and traditions;
- (d) care for the beauty of the mother tongue;
- (e) care for own and other people's safety and health;
- (f) dignified, cultural behaviour in and outside of school;
- (g) showing respect to others.

In summary, the certificate of school completion certifies the achievement of learning outcomes related to general education subjects and elements of personal and social competences.

**External assessment**

The external assessment is composed of a written part and a practical part. Although the practical part of the current external VET exam focuses on practical skills, many transversal or key competences are not assessed. In some professions, the introduction of the standardised external assessment system (since 1999) was at the cost of validity and authenticity. This is particularly the case for professions in which personal and social competences are of high importance, though the VET examination does not envisage interactions between examinees and examiners. In the upper technical schools in which learners need to take two exams (one in the form of documentation and one in the form of a performance) transversal skills related to problem solving are already quite well covered.

Source: Dębowski (2022).

A greater focus on the assessment of transversal skills and competences can also be observed in countries not included in the survey sample, such as Czechia and Slovakia.

Curricular reform in Czechia after the year 2000 (considered as the most significant change in education policy) introduced key competences (information technologies, economic education, foreign language) in the general component of educational programmes to support the employability of VET graduates. The [new Strategy for Education 2030+](#), adopted by the Czech Governance in October 2020, puts a strong focus on acquiring the competences needed for an active civic, professional and personal life. One of the strategic lines proposed explicitly refers

to assessment: 'Strategic line 1: Modifications in the content, methods and assessment of education includes a revision of educational programmes. A decrease of the learning content and strengthening of the competence-based approach are expected, particularly key competences, including the competence for lifelong learning'.

In Slovakia, in 2008, a manual aimed at implementing curricular reform (Jakubová, 2008) shows a change in paradigm addressing in detail key competences and a focus on the development and assessment of key competences. With the emergence of the discourse on transversal skills, curricula were adjusted and this also induced the need to assess financial literacy and entrepreneurship that represents the most visible innovation in transversal skills.

Previous research points to various challenges in assessing transversal learning outcomes (e.g. Dębowski et al., 2021; European Commission, 2012) <sup>(40)</sup> and they are not always addressed in assessments, as the following studies show. The Cedefop study analysing a set of three key competences (digital, multilingual and literacy) shows that in 23% of the IVET qualification types analysed, 'digital competence is not specifically assessed or is not assessed in all qualifications included in the qualification type' (Cedefop, 2020c, p. 67); they are also not assessed in 19% of the individual training programmes analysed (Cedefop, 2020c, p. 76). Also, the partnership of the EU-funded project *Developing, assessing and validating transversal key competences in the formal initial and continuing VET (TRACK-VET)* (Stęchły et al., 2019) observed that (at least in the countries covered by their project) transversal key competences are assessed only to a very limited extent. If they are assessed at all, it is usually in the context of continuous assessment by teachers and rarely in the context of assessment leading to certification (Dębowski and Stęchły, 2020). Also, in the Austrian case above, the main challenge remains how to assess transparently and holistically all relevant and complex transversal competences (Fellinger, 2022). Further, there are issues related to the vagueness of the performance descriptions or assessment criteria for assessing transversal competences, leaving the assessment to the subjective judgment of the teacher (Beier, 2019, p. 37). Overall, there seems to be no common clear understanding of what transversal competences are, let alone how to assess them.

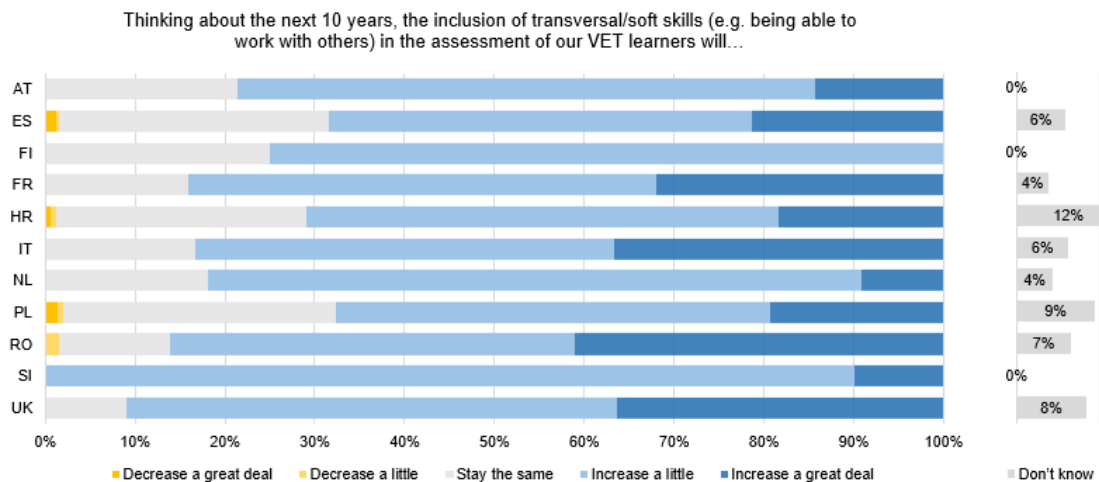
The *Prospective report on the future of assessment in primary and secondary education* (European Commission, 2020a) proposes six probable shifts in assessment in primary and secondary education by 2030; one of them includes a

---

<sup>(40)</sup> It is sometimes questioned whether it is even possible and ethically justifiable to assess certain transversal or 'generic' competences and to assign grades to them (particularly in summative assessment procedures).

shift to a broader variety of skills and competences to be covered in assessment. The VET provider survey also asked questions about the likely developments in VET over the next 10 years, also in relation to the inclusion of transversal/soft skills (e.g. the ability to work with others) in the assessment of VET students. The vast majority of respondents indicate that they expect an increase in this respect, as illustrated by Figure 6.

Figure 6. **Expected change in the inclusion of transversal skills in VET assessment**



Source: VET provider survey. Data from selected countries. n = 893.

In Finland, for example, the increased focus on transversal skills and competences will be further enhanced by the new approach to more generic assessment criteria (starting with August 2022). These criteria include transversal skills such as problem solving, initiative taking, critical and innovative thinking and inter- and intrapersonal skills.

In Poland, there are attempts to strengthen the inclusion of transversal competences, particularly personal and social competences as well as problem solving, in external VET assessments. Since 2019, the central examination offices have been piloting projects aimed at broadening the scope of VET examinations to include transversal skills (also because employers are signalling that demand for transferable skills is increasing), but these are the most difficult to include in the standardised national examination system. There is a general view that examinations related to personal and social competences should be well prepared before they are included in the national examination system. There is also conceptual work aimed at including virtual reality and augmented reality in the content of VET examinations. Due to the COVID-19 pandemic, some of this work has been halted, but it is planned to resume in the near future (Dębowski, 2022).

From this empirical evidence, it can be concluded that not only is the emphasis on and inclusion of transversal competences increasing, but also their assessment. However, certain transversal competences – especially in VET – are difficult to capture externally and their assessment is very difficult to implement independently and outside work contexts. This is still a relatively open field where much is in motion (e.g. there are some studies on this and also field trials as well as reform efforts).

### **3.3.2. Assessment of general subject knowledge**

Cedefop (2022b, p. 85) observes that in ‘several countries general education has become more relevant over the past years, either for all VET programmes or for a particular VET track/stream, leading to an increase of general subjects in the balance of skills and knowledge’. In some countries changes in how general subject knowledge is assessed can be observed and this is often linked to a tendency to externalise and standardise these examinations.

In the Netherlands, for example, centralised examinations have been developed for Dutch, English and Arithmetic; in Austria, standardised forms of written exams in German, modern foreign languages, and applied mathematics has been part of the partially standardised competence-oriented upper secondary school-leaving exam in colleges for higher vocational education since the school year 2015/16.

Since 2009, general skills have no longer been part of the final exam for programme completion in IVET in Croatia; only vocational skills are assessed. From 2008 on, VET graduates wishing to pursue higher education need to take the State *matura* exams on general education subjects. Around 90% of students in 4- and 5-year initial VET programmes take the State *matura* exam (Pavkov, 2022). This is also the case in Poland, where general education subjects are not part of VET external exams. However, learners of upper secondary technical schools can take (and most of them do) the maturity exam (which is based on the general education core curriculum) (Dębowski, 2022).

In Finland, since the 2017-18 VET reform, general studies have become obligatory for adult learners, provided that adult and youth VET have been (via the reform) regulated under the same legislation. The introduction of general subjects, which can be interpreted also as broadening the skills and competence base of adult apprentices will be reflected also in examination content. Assessment of general studies, however, has generally remained separated from the assessment of vocational studies, despite efforts to embed and combine them with vocational studies (Virolainen, 2022). This is also often the case in Estonia. Although the integration of general and vocational subjects is encouraged, they often remain

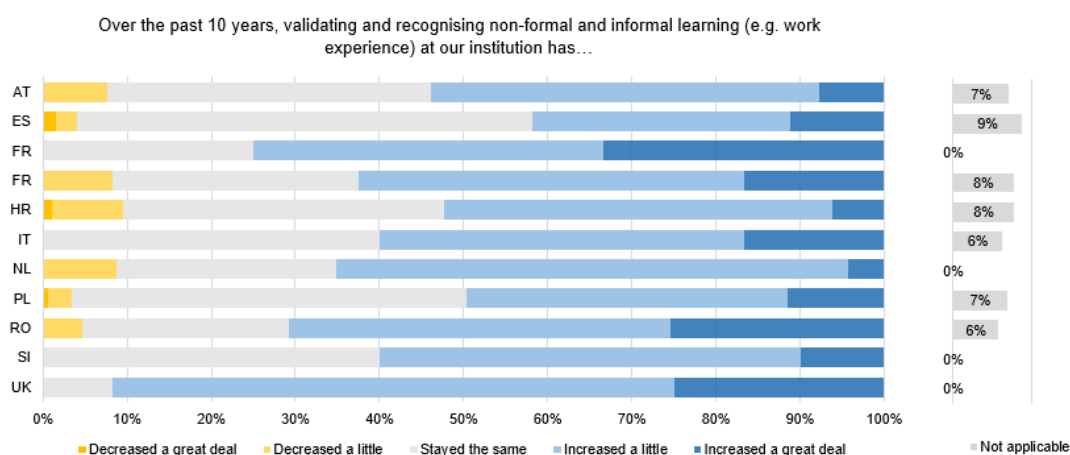
separate and so does their assessment. Separate summative assessment is particularly common in subjects such as mathematics or physics. Language skills, however, are often assessed as part of a complex vocational task (Mägi and Preegel, 2022).

The examples given show that the separation of general education and vocational content is often also reflected in separate qualifications as well as separate assessment processes. Croatia and Poland may be said to have ‘double qualifications’, as they are independent of each other to a degree. External and centralised standardised forms are increasingly being used to assess general subject knowledge.

### **3.3.3. Validating non-formal and informal learning with a view to obtaining a formal VET qualification**

The 2018 update to the European Inventory on non-formal and informal learning shows considerable progress has been made over recent years in relation to validation of non-formal and informal learning (Cedefop et al., 2019). Respondents to the VET provider survey were asked to give an estimation of changes related to validating and recognising non-formal and informal learning, such as work experience. In several countries more than 50% of the respondents stated that this had increased over the past 10 years (Finland, France, Italy, the Netherlands, Romania, Slovenia and the UK). This includes countries (such as Finland, France and the Netherlands) where validation of non-formal and informal learning has been well established for many years. Slightly below 50% of respondents in some other countries also reported an increase (Croatia, Austria, Poland). This share is lower among Spanish respondents, although there are already well-established measures for validation in Spain.

Figure 7. **Changes related to validating and recognising non-formal and informal learning (e.g. work experience)**



Finland, France and the Netherlands are among the countries where the recognition of prior learning (including validation of non-formal and informal learning) already has a long tradition. This is further illustrated in the following paragraphs.

In France, a 2002 law established an individual right to the recognition of professional experience (*validation des acquis de l'expérience, VAE*) in the acquisition of a qualification. This allows an individual to obtain part or all of a qualification based on professional experience. The candidate prepares an application documenting relevant professional experience, which is then examined by a panel including both academic and professional members. The panel may then either grant the full qualification, or alternatively set out the courses which need to be followed by the candidate to obtain it. The final qualification is the same as that which can be realised through a conventional learning programme (Chaparro, 2012; Field, 2021, p. 11). While the *VAE* system has grown rapidly in quantitative terms in the first years of its introduction, it remains marginal compared to the awarding of diplomas obtained through traditional IVET programmes. The proportion of diplomas awarded on the basis of *VAE* has actually been declining since 2011 and applications continue to be concentrated in a small number of qualifications, mainly in the health and social sectors (Mathou, 2019, p. 44). The introduction of the *blocs de compétences* (blocks of competences) starting in 2014 is one of the attempts to strengthen this approach (France Compétences, 2021):



**Box 8. Introduction of blocks of competences for supporting flexible career paths and recognition of prior learning in France**

‘A vocational diploma now consists of units of competences (blocks of general competences or blocks of professional competences). Each block is evaluated by an examination. A block of professional activities (made up of one or more activities) that are important to the target jobs and professions, corresponds to a block of professional competences, which in turn corresponds to a certification unit. Each block is therefore evaluated.

Since [...] 2016, adult candidates who choose to sit only part of the diploma examinations receive a certificate issued by the chief education officer (*recteur d’académie*), recognising the acquisition of the blocks of competences corresponding to the units/examinations they have validated.

These documents attest to the mastery of the competences related to a block, which enables individuals to mention their acquisition of these competences in the context of further training and with regard to employers’.

Source: France Compétences (2021, p. 20) <sup>(41)</sup>.

In Finland, the introduction of competence-based qualifications for adults in the 1990s based on the Vocational Qualifications Act of 1994 was an important structural shift towards validating informal learning and adopting competences acquired in the world of work in VET (Stenström and Virolainen, 2018, p. 111). It was first introduced in VET for adults and led to more holistic practices of assessment (with less assessment of minor tasks). Since 2005, when the competence-based approach was improved in youth education, it has been seen as a vehicle to acknowledge learning in various contexts, to increase economic efficiency, flexibility and individualised approach of education and to support principles of life-long learning. The legislation and decrees passed in 2005, and the subsequent renewal of national qualification requirements, emphasised personalised study plans and recognition and accreditation of prior learning. The latest substantial reform of VET, conducted between 2015 and 2018, emphasised this approach even more strongly. The core idea of the reform was to transform the VET system towards a more individualised, client-oriented and competence-based system, and to allow accreditation of learning regardless of the study place where the skills and competences had been acquired (Karusaari, 2020). The present practices for recognition and accreditation of students’ competences are explained in detail in the instructions given by the (Finland National Agency for Education, 2021).

The Netherlands has possibilities for adult learners to validate prior experience and to be exempted from certain courses and examinations. The

---

<sup>(41)</sup> [This report](#) uses the term ‘competencies’; on the website of France compétences.

student can apply to the examination board and must prove that the core tasks and work processes described in the qualification file are covered by prior experience (Netherlands. Ministerie van Onderwijs, 2020, p. 27). Therefore, the intended learning outcomes serve as a reference point also in the validation of prior learning experiences, and the examination can be replaced by other evidence of compliance (Broek, 2022).

Even in VET systems with a traditionally strong orientation towards work-based training and a focus on full qualifications, such as in apprenticeship training in Austria and Germany, changes have been observed in recent years with regard to the division of qualifications into smaller parts to facilitate the recognition of prior learning. These new offers are often initiated as projects by social partners and refer to a somewhat older target group than the people who usually start IVET in these countries: their aim is to update and officially validate and recognise professional competences of semi-skilled or unskilled adults with work experience who can take the apprenticeship examination as 'external' candidates.

In Germany, the external students' examination (*Externenprüfung*) <sup>(42)</sup> allows candidates with work experience (usually 1.5 times the length of the formal programme or equally long periods of initial training in another training occupation to obtain a full qualification in a recognised apprenticeship (Cedefop, 2021b, pp. 8-9). Also, the ValiKom Project, initiated by the German Confederation of Skilled Crafts and the German Chambers of Commerce and Industry, together with the Federal Ministry of Education and Research, 'enables identifying and assessing non-formally and informally acquired skills. Vocational experts examine the assessment based on the [standards of recognised vocational qualifications](#)'. Partial qualifications were introduced as part of a project initiated by the Chambers of Commerce and Industry and (until September 2022) supported by the Ministry of Education and Research (Teilqualifikationen, e.g. Fischer et al., 2020; Wittig and Neumann, 2016). This has led to a diversification of IVET learning pathways. Partial qualifications aim to allow adult learners (aged 25 and over) to acquire a vocational qualification by participating in modular learning opportunities that are derived from recognised occupational profiles and can be validated one by one. By accumulating partial qualifications, learners can become eligible to take part, as external candidates, in the final examination for the occupation in question and so achieve an IVET qualification without having attended a regular training programme.

The Austrian project *Du kannst was!* (You have competences!) was developed by the social partners (Chambers of Labour and Commerce) in

---

<sup>(42)</sup> It is regulated under Paragraph 45 (2) of the new [Vocational Training Act](#) (in force since January 2020) and [Paragraph 37 \(2\) of the Crafts Code](#).

cooperation with regional adult learning providers and was first implemented in 2012. It addresses people over the age of 22 without an apprenticeship qualification but with substantial work experience. This approach does not operate with partial qualifications but provides the possibility to take the final apprenticeship examination in two separate parts. In a first competence check, the existing competences (made visible in a portfolio) are evaluated and the missing competences required for achieving an apprenticeship certificate are identified and can be further acquired through specialised training courses. The second competence check focuses mainly on the competences lacking in the first check.

Another example of the enhanced possibilities to recognise prior learning (based on the assessment of competences) for obtaining a training qualification was reported from Norway. A new, on-the-job trade certificate (OJTC) was introduced in 2018 which does not require the same elaborate work experience as the experience-based trade certification (EBTC) <sup>(43)</sup>. For example, candidates in employment can be assessed for competence, get their training on the job and obtain a trade certificate based on this training. So far, this scheme is not offered in all counties, and the opportunity to participate varies between workplaces. At least 1 year of varied and relevant work practice is required before a contract can be signed for an on-the-job trade certificate (Norway. Utdanning.no, 2021). Until now, the requirement has been that one must either have completed apprenticeship training as an apprentice or have a minimum of 5 years of full-time practice in the area in order to register for the exam. The candidate receives training and supervision during the practical training period, and the duration depends on the individual subject and the candidate's real competence. In this way, it is ensured that a shorter period of practice does not compromise the final competence of the candidate, while at the same time facilitating flexible solutions. This [new scheme](#) should support adults to formalise their skills and to take professional and journeyman certificates.

---

<sup>(43)</sup> The EBTC (*praksiskandidatordningen*) is a scheme applying to people in employment, established in 1950. The experience-based route allows people who can document long, varied and relevant work experience (equalling 25% longer practice than for a regular apprentice, normally 5 years relevant practice) to register for the vocational trade examination, usually after taking a shorter theoretical course (Reegård and Rogstad, 2019). EBTC offers a formalisation of skills and competence acquired through practice. This practice-based option is a commonly used qualification route in the Norwegian labour market, accounting for about a third of all new trade certificates each year. It enables segments of the population with an otherwise low likelihood of completing upper secondary education to acquire formal qualifications at this level (Bratsberg et al., 2020).

Czechia and Poland, both with a traditional school-based VET system focusing on initial VET, have also opened up their formal VET systems to adult learners during the past 20 to 25 years.

While the Czech system of validation of non-formal and informal learning (VNFIL; introduced in 2006) with the national register of qualifications (NSK) has a strong focus on CVET offered outside the formal system, there are some connections to the formal system. 'Certain vocational qualifications can be combined to obtain a comprehensive vocational qualification and, after a final exam, can lead to an IVET qualification. Approximately 80 IVET qualifications at EQF level 3 can be obtained in this way, which can be seen as a bridge between VNFIL and formal VET. About 30 vocational qualifications included in the NSK at EQF level 4 and obtained through validation of non-formal and informal learning can be recognised as the vocational part of the *maturita* exam, leading to the Certificate of upper secondary vocational education with *maturita* exam; the standardised part of the *maturita* exam (Czech language, English or Maths) must be passed as well' (Cedefop, 2020a; 2021a, p. 9; Czechia, 2020). In Poland, enabled by the introduction of the learning-outcomes-based core curriculum in VET in 2012, adults can participate in procedures for the recognition of prior learning and take up the offer of short courses with external examinations. Previously, there were no opportunities for validation of non-formal and informal learning; adults had to attend adult schools (Dębowski, 2022).

Validation in formal IVET in Estonia, also a country with a strong school-based tradition, was legally anchored in 2013 with the VET institutions act and the vocational education standard (a framework document that sets out general principles for validation). Outside the formal education system, the occupational qualification standard is used in validation as it specifies the requirements for obtaining an occupational qualification (another type of a state-recognised qualification that is connected with a trade, occupation or profession, usually resulting from work-based learning, in-service training and adult education). Non-formal and informal learning in Estonia can be validated to meet admission requirements to certain programmes, to support completion of a VET programme, or to obtain a professional qualification (Johnson, 2019).

In Spain and Lithuania, again countries traditionally with more school-based IVET systems, reforms to improve the possibilities for recognition of prior learning in IVET have only recently been initiated:

In Spain, a [new procedure for validation of non-formal and informal learning](#) was approved in 2021. It intends to support individuals wishing to acquire a formal qualification. 'The new regulation places the initiative in the hands of the individuals, who can apply at any time to the public authorities to have their skills

validated. [...] The process begins, as usual, with an initial assessment stage led by a guidance counsellor, who draws up a guidance report for the applicant. This is followed by the assessment phase, when the report and the documentation provided by the candidate are analysed and the competences acquired in the workplace are assessed using various methods. Finally, the assessment outcomes are recorded in a State-wide register'. The reference points for assessment are the units of competence included in the National Catalogue of Occupational Standards.

In Lithuania, in 2020, the Ministry of Education, Science and Sports approved the new procedure for the assessment of acquired competences, according to which formal VET qualifications (EQF levels 1-4) are issued. This new procedure will also support candidates who have acquired competences outside the formal VET system and is presented in Box 9.

**Box 9. New procedure for the assessment of acquired competences for formal VET qualifications in Lithuania**

The introduction of the [new practice of assessment](#) can be seen as a logical step in the implementation of the competence-based approach to the assessment of non-formal, informal and experiential learning made possible by the introduction of the occupational (qualification) standards and the national modular VET curricula. The qualification standards provide the reference point for the assessment.

'The competence assessment consists of:

- the theoretical (knowledge) test conducted centrally through the electronic testing system administered by the National Agency for Education;
- the practical (ability) assessment conducted at training establishments that have the hardware and tools necessary to perform the task, or at a real workplace equipped with the necessary hardware and tools:
  1. for those who have independently acquired professional competences, the practical (ability) assessment consists of tasks to demonstrate practical abilities;
  2. for those who have completed a formal vocational education and training programme, the practical (ability) assessment consists of tasks to demonstrate practical abilities and an evaluation of practical training'

For the practical part of the assessment, at least 10 practical competences must be assessed: five tasks must cover the whole cycle of the work process and lead to a specific product; five tasks must cover individual steps of a professional activity.

The assessment of the practical task follows a criteria-based assessment model and for each competence the criteria for the assessment of the competence are defined on the basis of the outcome of the task (e.g. the product, the service provided, the single professional activity) and the characteristics of the process for performing the task. The number of criteria for each of the competences assessed is not fixed, but depends on the specificity of the competence to be assessed, following the logic and principles of criteria development according to the requirements of the work process.

It is recommended that the assessment task includes a reflection, a conversation between the assessor and the assessed person after the completion of the assessment

task, in order to allow the assessor to comment on the practical assessment task, to avoid a narrow interpretation of the results and to ensure a balance between rigour and flexibility. The practical part of the assessment should include not only an assessment of performance but also an assessment of the learner's understanding of the work done.'

Source: Tutlys (2022).

It can be concluded that the increasing possibilities to have one's previously (also outside the formal learning context) acquired competences credited has also led to an expansion of assessment possibilities. In some cases, entirely new examination formats have emerged; in others, existing examination formats have become accessible to new target groups. In this context, a clear opening of VET can be observed (whereas there are fewer additional access options in general education).

### 3.4. Trends in reference points for assessment

The VET provider survey asked respondents to indicate what was currently used at their institution as a basis or reference point for assessment leading to the award of a qualification <sup>(44)</sup>. In quantitative terms, in Austria, Spain, Finland and Slovenia, nationally determined assessment standards and criteria were most frequently mentioned as a reference point for assessment, whereas in France, Croatia and Poland, national framework curricula were most frequently mentioned. In Italy, the Netherlands, and Romania, qualifications standards were most frequently mentioned <sup>(45)</sup>. Figure 8 presents these results in further detail (note that the survey question allowed for multiple responses). Respondents' expectations for the future suggest expansion of the use of learning-outcomes-based assessment standards (as illustrated in Figure 9). At many institutions, combinations of different reference points are common: a mix of qualifications standards and nationally determined assessment standards and criteria in the Netherlands and the UK (for one quarter

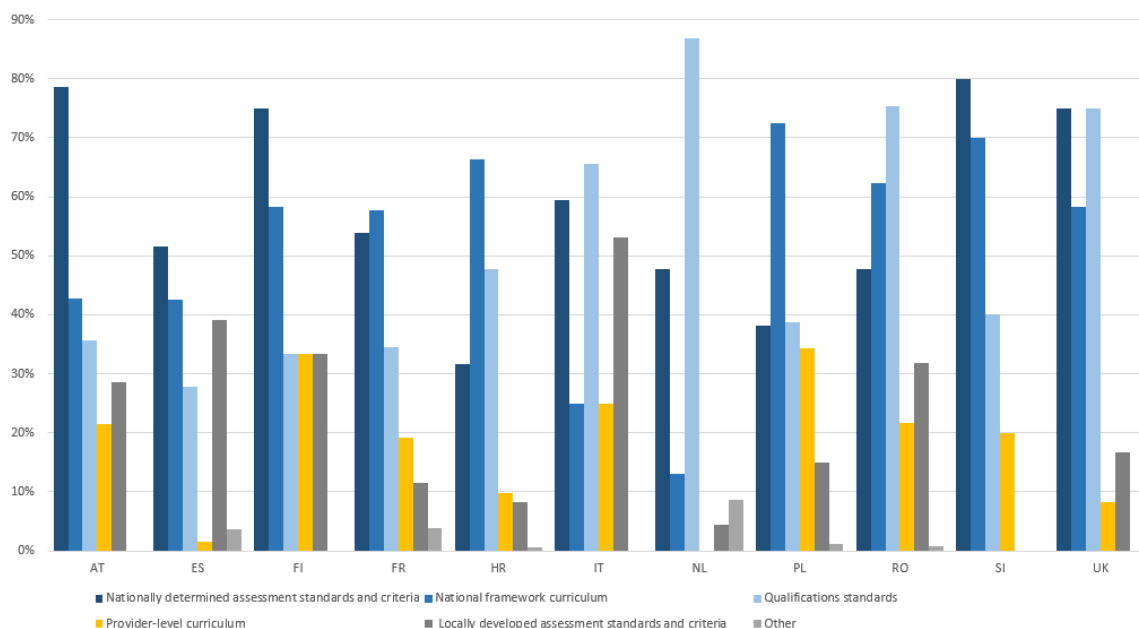
---

<sup>(44)</sup> The answer options included: nationally determined assessment standards and criteria, national framework curricula, qualification standards, provider-level curriculum, locally developed assessment standards and criteria, other. No further explanation of these categories was provided, leaving it up to the respondents to decide how to interpret them. However, these reference points may well be linked or even combined at national levels, as assessment standards and criteria may be included in national framework curricula, for example.

<sup>(45)</sup> Cedefop (2016, p. 47) also observes that assessment 'methods shift from norm-referenced (learner attainment based on ranking within a cohort) to criterion-referenced approaches (learning attainment based on performance relative to set standards and criteria)'.

of the respondents each); or a mix of nationally determined assessment standards and criteria, national framework curriculum and qualifications standards mentioned by one third of the respondents in Slovenia.

Figure 8. Reference point for assessment leading to the award of a qualification



Source: VET provider survey. Data from selected countries. n = 893; multiple responses allowed.

Qualifications standards are the primary reference tool mentioned by survey respondents from the Netherlands, where the reference documents for assessment are descriptions of the core tasks and work processes in the qualification files. These are defined per qualification and form the basis for examination tools developed by exam suppliers or consortia of VET schools (Broek, 2022). In Lithuania, the introduction of the competence-based VET standards in 1997 and 2008 is seen as one of the most important changes in VET assessment, as these standards set criteria for the assessment of competences; the assessment tasks in the qualification examinations were from then on based on competence descriptions, but the training process itself continued to be based on subjects (Tutlys, 2022).

Poland is an example of a country where national framework curricula were mentioned by survey respondents as a primary reference tool for assessment in VET. During 2004-12, assessment had to be in line with the examination standard, a formal document adopted by the Ministry of Education. In 2012, learning-outcomes-based curricula were introduced in formal VET along with the concept of qualification. Each core curriculum refers to three, two or one qualification and



learners had to pass three, two or one external VET examination, depending on the curriculum, to obtain a VET diploma. The learning outcomes set out in the VET core curriculum now fulfil the role of examination standards, as assessment must be aligned with these learning outcomes (Dębowski, 2022). The core curriculum specifies a set of assessment criteria for each learning outcome. The example in Box 10 shows an extract from a unit of learning outcomes as part of the VET curriculum for the occupation mechatronics technician.

**Box 10. Learning outcomes and assessment criteria: example from Poland**

<b>Assembly of elements, subassemblies and mechanical units</b>	
Within this unit of learning outcomes there are four learning outcomes distinguished; for each, assessment criteria are defined. The assessment criteria for two learning outcomes are presented below:	
<b>Learning outcomes</b>	<b>Assessment criteria</b>
1) characterises the elements, subassemblies and mechanical assemblies	1) recognises elements, subassemblies and mechanical assemblies, e.g. shafts, axles, bearings and couplings, gears, mechanisms and spring elements; 2) describes the structure of elements, subassemblies and mechanical assemblies; 3) explains the principles of operation of elements and subassemblies and mechanical assemblies; 4) determines the use of elements and subassemblies and mechanical assemblies; 5) selects elements, subassemblies and mechanical units for assembly of mechatronic devices and systems.
3) Performs size measurements, geometric elements of machines	1) distinguishes between control and measurement instruments and measurements of geometrical sizes of elements machines; 2) selects control and measurement instruments for measurements of sizes of geometric elements of machines; 3) apply the rules for performing size measurements of geometric elements of machines; 4) selects methods of measuring geometric quantities machine components.

NB: Translated by the author based on <https://www.ore.edu.pl/wp-content/uploads/2020/03/technik-mechatronik.pdf>

Source: Dębowski (2022).

Criterion-based assessment in VET is widely used across countries, including Croatia (Croatia, Ministry of Science and Education, 2020), Finland (Räisänen and Rökköläinen, 2014), Norway (Tveit, 2014), UK (Carter and Bathmaker, 2017).

In Finland, VET qualifications are structured into study units based on competence areas (related to the world of work). The assessment takes place by comparing student's competence to the competence defined in the qualification requirements in diverse ways; the assessment has to address all the skills and competence requirements set in the qualification or in its units (*Laki ammatillisesta koulutuksesta* 531/2017, Art. 53). The assessment criteria are given for each study unit, and competences are demonstrated and assessed preferably during practical tasks completed in authentic work situations during workplace learning. The



assessment criteria for young people in VET in the 1990s were much more general than the current qualification requirements. However, the present trend is again towards more general assessment criteria and this change will take place from 2022 onwards. Instead of giving assessment criteria for each unit of each qualification separately, a common set of assessment criteria will be applied across the study units; while the competence requirements will vary between qualifications, the generic assessment criteria for different competence levels will be quite similar. This should make their interpretation and utilisation easier and more flexible, allowing adjustment to varying contexts and tasks at various workplaces. Given the increasing pace of change in the world of work, it can also be assumed that nationally agreed criteria for the assessment of units used up to 2022 will inevitably lag behind current working practices to some extent. More generalised assessment criteria will be adopted in Finnish VET in the future. For example, in the qualification requirements for electrical engineering it is stated at the level good (3) that the student is able to carry out the task in an independent way, is collaborative and initiative-taking in interaction, is able to solve typical problems, utilises occupational skills in varied ways and assesses his or her own performance in a realistic way. This criterion could also be directly applied in the vocational qualification in social and health care (Virolainen, 2022). Further examples of generic assessment criteria to be applied as of August 2022 (when new qualification requirements are designed) are presented in Box 11.

**Box 11. Introduction of generic assessment criteria in Finland in 2022**

The grade satisfactory (1) demands that the students:

- complete task following orders;
- act collaboratively, may request further instructions;
- utilise basic information needed in the task;
- adapt their own actions based on feedback.

In contrast, the very good grade (5) presupposes that the students:

- plan and complete tasks independently, taking other actors into account;
- act collaboratively and constructively even in demanding interaction situations;
- apply knowledge needed in the job for problem-solving in a critical and versatile way;
- make justified proposals for improving the work process and work environment;
- assess own actions realistically and propose justified solutions for developing their own competence;
- understand their own task's meaning for the larger whole in the work process.

Source: Virolainen (2022) (based on Opetushallitus [Finland. National Agency for Education], 2022).

There is also evidence that countries are developing explicitly defined assessment specifications. In Romania, for example, assessment standards for

each unit of learning outcomes were introduced in 2014. They also detail the equipment needed in the assessment and certification process and include a set of assessment and certification criteria and subsequent indicator (Luomi-Messerer et al., 2015, p. 75). In Estonia, the transition to outcome-based curricula during the 2013 VET reform has led to the introduction of assessment principles based on learning outcomes, with a new regulation on assessment adopted <sup>(46)</sup>.

#### Box 12      **Reference points for assessment in IVET in Estonia**

In Estonia, the main reference documents for assessment are occupational qualification standards and vocational education standards:

- occupational qualification standards, which are the basis for national VET curricula and for the assessment of individuals' competence, describe expected competences (observable and assessable) in terms of learning outcomes. They are accompanied by assessment standards which define the method(s) for assessing learner competences and the assessment criteria or performance indicators ('satisfactory' threshold).
- learning outcomes of different types of VET programmes are described in the VET Standard which states the requirements for national and school curricula, including objectives, expected learning outcomes, volumes of study graduation requirements and assessment criteria.

The assessment criteria for vocational and general subjects are described in curricula and are based on the learning outcomes but are formulated in more detail.

There is a legal obligation to publish assessment criteria and methods. This increase in transparency means that students, teachers and employers have access to information about assessment (what is assessed and how). It empowers students to take responsibility for their own learning journey (Mägi and Preegel, 2022).

Source: Kaldma et al. (2019).

In UK-England, all apprenticeships offered from the 2020/21 academic year are to be shaped to follow the [new apprenticeship standards](#), which also refers to assessment standards: 'The new apprenticeship standards are designed by employers and are intended to meet the needs of the specific job that the apprenticeship will train the apprentice towards. The standards outline the level of the apprenticeship, the duration, the funding band and the entry requirements. They also set out what apprentices will learn, how they are assessed, what qualifications they will receive and whether the apprenticeship leads to professional registration'.

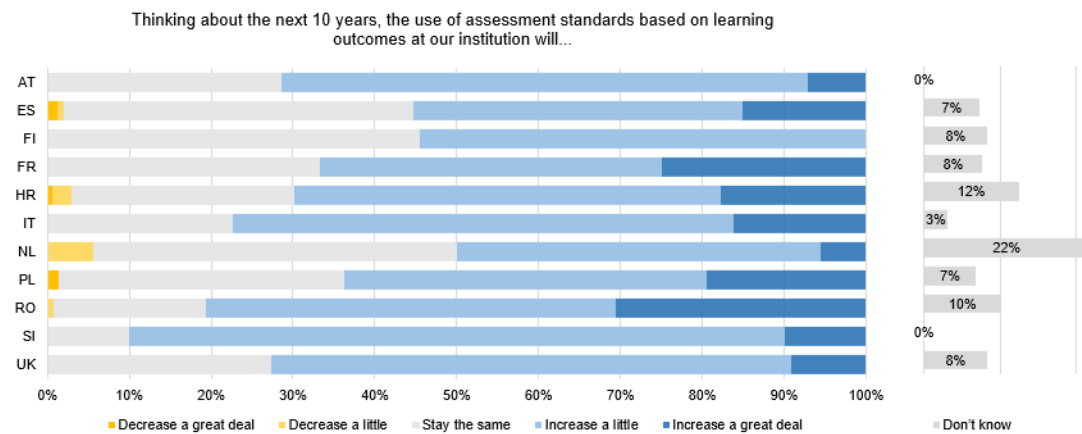
To sum up, the empirical evidence suggests that assessment specifications, in particular specifying the criteria for assessment, are increasingly being used.

---

<sup>(46)</sup> [Regulation on assessment](#) [Kutseõppes kasutatav ühtne hindamissüsteem, õpiväljundite saavutatuse hindamise alused, hindamismeetodid ja -kriteeriumid ning hinnete kirjeldused].

The shift to learning outcomes for describing qualifications and curricula has also strengthened the use of learning outcomes as reference for assessment, a trend which is likely to continue in the future. When VET provider survey respondents were asked about their expectations as to how the use of assessment standards based on learning outcomes at their institution will change over the next 10 years, most pointed to an increase. This is most strongly pronounced in Italy, Austria, Romania, Slovenia and the UK, where more than 70% of respondents expect an increase in this regard. Finland is not among those countries but nationally determined assessment standards and criteria are already widely in use.

Figure 9. **Expected future changes in the use of assessment standards based on learning outcomes**



### 3.5. Trends in assessment methods and context

#### 3.5.1. Standardised vs individual and flexible assessment approaches

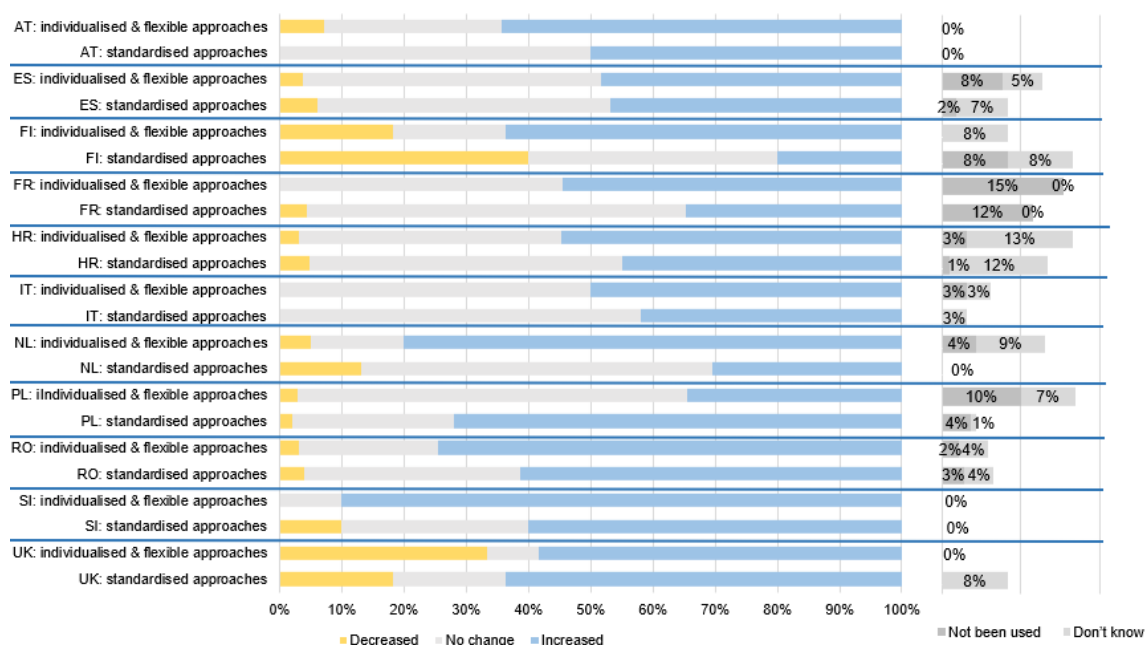
Two poles of a spectrum can be distinguished in the general design of assessment approaches. At one end are standardised forms of assessment that are the same for all learners in terms of method, context, and assessment criteria. These are usually closely linked to summative procedures, particularly to final examinations leading to the award of qualifications. The methods applied typically include multiple-choice or other closed test formats. At the other end of the spectrum are individual and flexible forms of assessment. These allow the assessment to be adapted to the individual circumstances and needs of the learners and are used especially for formative, but sometimes also for summative, purposes. This approach also allows for the use of more 'open' assessment formats, such as portfolios to demonstrate student progress.

The VET provider survey asked about changes related to the use of these specific assessment approaches observed during the past 10 years: standardised assessment approaches on the one hand, and individual and flexible forms of assessment on the other. Figure 10 shows a mixed picture across countries in the use of standardised approaches. While for some countries most respondents indicated no change (France, Italy, the Netherlands), in other countries more than 50% of respondents indicated an increased use (Poland, Romania, Slovenia, UK) or the indications are fairly balanced between no change and increase (Spain, Croatia, Austria). Finland stands out, as one third of respondents observed no change and another third a decrease of the use of standardised approaches. The use of individual and flexible forms of assessment has generally increased during the past 10 years, an exception being Poland. The strongest increase can be observed for the Netherlands, Romania and Slovenia <sup>(47)</sup>. In two countries, a relatively high number of respondents referred to a decrease in the use of flexible forms of assessment: UK (33%) and Finland (17%). In the UK, this could be related to the increased use of assessment results to monitor the performance of VET institutions, as mentioned above. In the case of Finland, it should be noted that the degree of individualisation and flexibility in VET was already high, so the decline indicated by the survey respondents does not mean that this assessment approach has been marginalised.

---

<sup>(47)</sup> The use of portfolios might be linked to the shift to workplace learning, as reported for Greece: Workplace learning (provided at upper secondary and post-secondary level) has affected the assessment methods of its learning outcomes. Portfolio assessment, task completion, workplace diaries are recommended in policy texts for the evaluation of laboratory and workplace learning (Cedefop, 2020a, EL, p. 4).

Figure 10. **Change in the use of standardised and individualised and flexible assessment approaches**



Source: VET provider survey. Data from selected countries. n = 893.

Looking at the observed processes of change in these two aspects in their combination in the individual countries, the following patterns can be identified (Table 9): while in two countries an increase is indicated by less than 50% of survey respondents for both cases, 50% or more than 50% of respondents from four other countries indicated an increase of both methods. This might point to an overall increase in assessment carried out, whatever form it takes. For four countries more than 50% of respondents referred to an increase related to the use of individual and flexible assessment approaches; for these, however, fewer than 50% of respondents indicated an increase of the use of standardised approaches. For one country, Poland, the result is exactly the opposite. This perspective shows that both trends may well be present at the same time in some countries, while in others clear trends in one or the other direction can be observed. In this, the respective starting point must also be taken into account.

Table 9. **Standardised versus individual and flexible assessment approaches**

Indication of increase – combinations	Countries
Increase is indicated by less than 50% of respondents in both cases	ES, IT
Increase is indicated by 50% or more of respondents in both cases	AT, RO, SI, UK
Increase related to the use of individual and flexible assessment approaches is indicated by more than 50% of respondents, less than 50% of respondents indicated an increase of the use of standardised approaches	FR, HR, NL, FI
Increase related to the use of the use of standardised assessment approaches is indicated by more than 50% of respondents, less than 50% of respondents indicated an increase of the use of individual and flexible approaches	PL

Source: Cedefop, based on VET provider survey. Data from selected countries. n = 893.

Based on these observations, it can be concluded that there is no clear trend in one or the other direction. The developments are very country-specific and depend in each case on which role and function is associated with the assessment.

### 3.5.2. Collecting evidence related to practical knowledge

While written tests are still commonly used, there is evidence that countries have increasingly introduced various ways of collecting (direct and indirect) evidence related to practical knowledge. This development is strongly linked to the shift to a learning-outcomes and competence-based approach. This is also the case in traditionally more school-based VET systems, such as Finland, where vocational skills demonstrations were introduced as an assessment method in 1999 and adopted into IVET from 2006 on. In the Netherlands, increasing emphasis has been placed on the skills and competences components over the past 25 years: VET students must be able to perform the core tasks defined in the qualification files. This means that assessment has shifted away from written exams (focusing on the knowledge component) towards demonstrating mastery of core tasks in a real occupational context. The knowledge components also had to be assessed increasingly in a real occupational context (Broek, 2022). This is a rather new development in Hungary where, with the new act on vocational education and training (in force from 1 January 2020), vocations have become outcome-regulated. The outcome requirements of the given vocation were defined in learning outcomes aligned with the categories of the Hungarian qualifications framework (skills, knowledge, attitude, responsibility-autonomy). As a result, the examination activities included in the vocational examination are far more practice-oriented than before, and are designed to measure professional capacity rather than focusing on the reproductive testing of vocational knowledge and skills.

Several countries have also introduced final practical exams or assignments, as the example from France and Croatia illustrate:

The reform of the vocational pathway initiated in 2018 in France provides for each young person to produce a *chef-d'oeuvre* ('masterpiece') using knowledge and skills acquired during their general and professional training <sup>(48)</sup>. The assessment of the work produced by students and apprentices in CAP (Professional skills certificate) and vocational baccalaureate is based on the verification of transversal skills and key competences.

In Croatia, parallel to the introduction of the State *matura* exam, the VET student's final practical assignment was introduced in 2009. This assignment is obligatory for all VET students and it marks the successful completion of the VET programme (the final assessment in VET does not cover general subjects). It includes the preparation of a thesis, as explained in Box 13.

**Box 13. Final practical assignment in Croatia**

In Croatia, as part of the final practical assignment, learners have to prepare a practical final thesis, and also defend it. The aim of this procedure is to evaluate and assess the students' achieved professional competences acquired through the training according to the prescribed vocational theoretical and practical parts of the curricula, in order to complete the educational programme undertaken and to create the conditions for integration into the labour market. The final thesis may be a project, an experiment or another task consistent with the VET programme. Final theses have the characteristics of a research or project work and require independent literature research, analysis of the data obtained, evaluation of the data. In cases where the final thesis consists of practical work, the written elaboration should include an account and description of the practical part and the results (Croatian Agency for Vocational Education and Training And Adult Education, 2020).

A certificate is issued to the student who has defended the thesis. The certificate of the final thesis is a document confirming the acquired professional competences. By passing the final thesis, students acquire the secondary school leaving certificate and receive a certificate of completion from the VET school.

The Centre for External Evaluation of Education has explored the idea of standardising the final practical assignment, similar to the State *matura*, but no significant developments have been made in this regard. The major challenge was that Croatia has a large number of VET programmes and it is difficult to standardise them.

Source: Pavkov (2022).

In Poland, external examinations in VET have also developed since 2012 in the direction of performance assessment that resembles real work situations to a greater extent. Nowadays, the external examination consists of a written part and a practical part. The latter can last 120 to 240 minutes and can take different forms, as explained in Box 14.

<sup>(48)</sup> A dedicated guide has been published by the Ministry of National Education (France. Ministère de l'Éducation nationale et de la Jeunesse, 2019).

**Box 14. Practical part of the final external examination in VET in Poland**

The practical part of the final external examination can take the form of a documentary or a performance.

- Documentation (so called model 'd'): as an examination task, learners have to solve a case study or a series of case studies related to a professional task in a specific occupation. A case study can be solved on paper but, in some occupations, this is done using computers and special IT programmes (e.g. accountants use special IT accounting systems). The solved case studies are sent to the regional examination board after the examination (either in the form of a paper or electronic copy) and are then assessed by external examiners (raters/assessors).
- Performance (so called model 'w'): a learner has to perform a work activity during an examination and the examiner (rater/assessor) assesses this performance according to the national assessment criteria. For example, a car mechanic has to diagnose and repair an engine failure during the examination, and a massage therapist has to perform a massage on a real person, while the examiner assesses whether it was performed according to the assessment criteria and professional knowledge and practice. In some occupations, this performance may also be done with the help of computers or special programmes: for example, a mechatronics technician has to programme a control system as an examination task.

In most upper secondary occupations, learners have to take two examinations, one of which is usually in the form of documentation and one in the form of performance. The documentation part focuses on abstract thinking and problem solving, while the performance part tests whether the learner has acquired practical skills. In this way – it is assumed – learners are prepared to fulfil the active roles as required in the labour market.

Source: (Dębowski, 2022).

In several countries, project assignments have been introduced as part of the final practical assessment, as the example from Luxembourg and the recent reform from Hungary show (in the latter case, portfolios are also used). In Luxembourg, a reform in 2008 'replaced theoretical and practical final exams with assessment based on an integrated project, which corresponds to a simulated or real working situation, undertaken over a period of up to 24 hours. The integrated projects are developed and assessed by teams of experts from employer organisations, and technical teachers from secondary schools (plus some additional assessors). Success in this final assessment leads to certification' (Field, 2021, p. 19). A new legal regulation in 2020 brought radical changes to the Hungarian VET system that also has an influence on the assessment procedure: the vocational exam consists of a central examination module specified in the training and outcome requirements and a project (a complex, work-based task), as presented in Box 15.



**Box 15. Projects as part of the final exam in VET in Hungary**

The project is determined by the accredited examination centre, taking into account the training and outcome requirements, and serves a more comprehensive assessment of the candidate's practical skills. The project must be prepared for the vocational exam and defended orally, demonstrating the acquisition of the skills required for the practice of the respective profession. The project also includes a portfolio showing the development of the candidate's professional, social and personal competences.

The project exam (practical exam and portfolio) enables the examining board to assess whether the candidate has mastered the complexity of the expected learning outcomes and is able to practise the respective profession independently and effectively. The presentation of the project and the portfolio is a new element of the final examination in VET and thus replaces the 'traditional' oral examination.

The portfolio consists of two main parts. One is the document, which can include a range of different documents (e.g. references, photos, videos, presentations, competence competitions, Erasmus+ mobility projects, works produced in workplaces) and a self-assessment or self-reflection part. The main objective is to make the learner's competences widely visible. The portfolio must be kept continuously by the learner during the course of study.

*Source:* Authors, information received from Éva Farkas (email, 22 February 2021).

Czechia is currently conducting pilots to experiment with a new form of the *maturita* exam (school-leaving examination) (ReferNet Czechia and Cedefop, 2022). Several upper secondary VET schools are testing the use of a comprehensive graduate thesis as an alternative form for the profile part of the exam. This part focuses on the thematic profile of the various VET schools and used to consist of separate examinations for individual subjects. This new approach transforms this part of the exam into a long-term comprehensive task within a real work environment. It places higher demands on students as the elaboration of the thesis should cover a broader and practice-related topic. They also have to present and defend the thesis and the conclusions of their work in front of the examination board. The board evaluates the students' knowledge and skills in the relevant subjects.

The increased introduction of practical final examinations or tasks, including project assignments and assessment formats that resemble real work situations, suggests a greater emphasis on the use of sources and assessment methods that provide evidence related to practical knowledge. There is generally more emphasis on gathering evidence of the ability to make use of knowledge, skills and competences acquired and to solve work-life problems in real work environments than on (only) written examinations. The corresponding assessment formats provide the opportunity to focus more strongly on determining vocational action competences.

Different sources and methods are being used. This is in line with the observations of Psifidou (2014, pp. 144-145) who pointed to a tendency in VET to broaden learners' assessment 'not only in terms of the purposes and methods used but also in terms of the learning outcomes measured. Increasingly, more holistic approaches to assessment are used to effectively measure the new higher-order skills that modern investment strategies demand, for example, key competences'.

### **3.5.3. Environment: face-to face versus online**

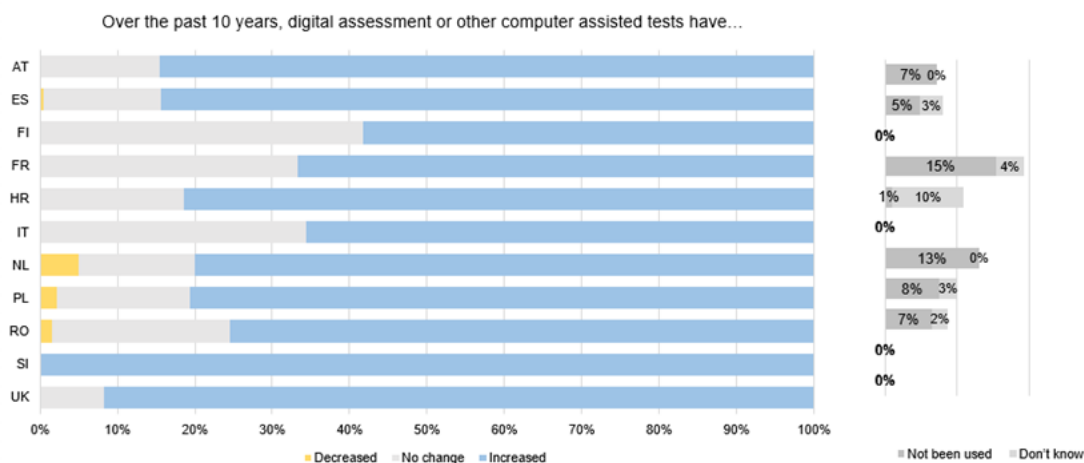
The increasing use of digital learning is expected to lead to a transformation to technology-based assessment (Sangmeister et al., 2018). A 'tendency to increasingly use new computer-based assessment methods in VET assessment (such as e-portfolios and simulations of real work settings), e.g. in maritime education and training or in IT' has already been observed by Psifidou (2014, pp. 144-145) and digitalised assessment is expected to be even more strongly emphasised in the future (European Commission, 2020a).

There are, however, some indications that assessment does not always follow innovations in relation to learning. For example, despite technology advances and although new computer technologies are used in teaching activities, 'much assessment in vocational education has not changed materially for a very long time and ... economically and technically unsustainable practice is rife' (Coates, 2018, p. 2). This (pre-pandemic) observation is, for example, made in relation to the German apprenticeship context. The implementation of computer-supported assessments in dual VET is still largely a matter for the future in many occupations; corresponding examination formats would first have to be developed. Further, the legal provisions in most education and training regulations still stand in the way of a computer-based examination, as the written form is mandatory (*Enquete-Kommission Berufliche Bildung in der digitalen Arbeitswelt*, 2021, p. 196). The time needed for the adoption of legal provisions is also an issue in other countries and may also relate to the fact that in order to introduce innovations in assessment they have to be quality assured (typically by national agencies) and accepted by the national (regional) key stakeholders.

The trend towards technology-based transformation of assessments is also visible from the VET provider survey. Participants were asked whether the use of digital assessment or other computer assisted tests has changed over the past 10 years: 74% indicated that this use has increased. Figure 11 illustrates a pronounced increase in Slovenia (100%) and UK (92%), and less so in Finland (58%) and France (54%).

Figure 11. **Changes related to the use of digital assessment or other computer assisted tests**

Source: VET provider survey. Data from selected countries. n = 893.



This trend accelerated with school closures and general lockdowns during the COVID-19 pandemic, and it remains to be seen to what extent the adjustment in assessment processes during that time will be sustained thereafter (for more information see Chapter 3.8). Poland is an example of a country that had already introduced digital technologies for summative assessment before the pandemic. In 2019, a central IT system was introduced, with the entire process of exam organisation is handled by the system. Learners submit their declaration to take the exam, raters (examiners) indicate their availability, and the central examination board sets the exam dates and times. The written part of the VET examination is also compulsorily organised with the help of computers and the IT system, which enables the introduction of more complex examination tasks, e.g. in the form of animations or videos (Dębowski, 2022). However, the introduction of digital assessment is not always welcomed, as the example from Croatia shows: the National Centre for External Evaluation of Education conducted a pilot on digital assessment in 2019. This showed that – as the schools themselves are not implementing digital assessments – students (including VET students) are not acquainted with the digital approach to assessment and this interferes significantly with the demonstration of acquired skills and knowledge. Therefore, this form is still not accepted by students and the centre does not yet plan to develop and introduce digital approaches to the assessment (Pavkov, 2022). By a way of contrast, in 2020 an e-grading application for State *matura* exams was tested; based on the results achieved it was decided that, as of school year 2022/23, the e-grading application will be used for grading State *matura* exams for all subjects.

In Germany, new technology-based assessment formats are being developed and piloted. The [ASCOT+ research and transfer initiative](#) of the German Federal

Ministry of Education and Research aims to develop digital learning and assessment instruments to measure the competences of trainees and to pilot them in practice. ASCOT stands for technology-based assessment of skills and competences in VET. The ASCOT+ projects are developing digital measuring instruments for professional and cross-professional competences in three professional fields and test them as teaching and learning media and in exams. The projects aim to develop instruments that are suitable for assessment in an authentic workplace simulation. These projects are presented in Box 16.

Box 16. **ASCOT+ projects: Germany**

**ASPE – Digital workbench for competence-oriented examination tasks and final examinations**

The project pursues the goal of advancing the development and use of competence-oriented final examinations for commercial professions (industrial clerks and clerks for freight forwarding and logistics services). For this purpose, a standardised and professionalised design process and an online tool for the digital creation of competence-oriented examination tasks and final examinations is being set up. From September to November 2021, learners were already able to log on to a digital learning platform to familiarise themselves with the functionalities of the workbench.

**DigiDIn-Kfz – Digital diagnostics in the motor vehicles sector**

To measure the ability to make diagnoses in the occupation of motor vehicle mechatronics technician, the project has developed a computer-based test. This is based on video vignettes, i.e. case studies or scenarios that are presented on film.

**EKGe – Extended competence assessment in the healthcare sector**

‘The project is developing a measurement tool for inter-professional cooperation competence and a digital assessment instrument for trainees’ abilities to deal with mental pressures.’ In situational judgement tests, video-based or written hypothetical situations are given. Participants are then asked to choose one of usually several predefined courses of action. The tests include short videos with examples from the everyday professional life of nurses. These video vignettes can be used in schools for casework and can also be used as part of examinations.

**PSA-Sim – Problem-solving analytics in office simulations**

‘The project is developing an office simulation which fosters the problem-solving competence of trainees in the occupations of industrial clerk and office management clerk and records their trouble-shooting performances with real-time analytics.’ The software developed can be used for testing as well as for training purposes.

**TechKom – Technology-based competence assessment and support during initial training in electrical engineering and metalworking technology**

‘The project is developing instruments for supporting analytical and constructive problem-solving competence as well as additional examination tasks for trainees in technical occupations.’

### **TeKoP – Technology-based competence-oriented testing**

The project aims to develop and deliver training that enables examination staff, trainers and teachers in the training occupations of industrial clerk and office management clerk to develop competence-oriented (problem-based) and complex examination tasks in a technology-based manner and implement them.

Source: [ASCOT+](#).

Digital technologies can also be used for formative assessment, as the example from Switzerland shows. A mobile learning solution – the e-Dap – was developed, allowing chef apprentices to create an own e-portfolio and recipe book; in the Swiss context this also has the function of learning personal documentation (LPD). The LPD is a mandatory and administrative task for all the VET professions which requires apprentices to document, through specific templates, major works and achievements carried out at the company. In the e-DAP, the LPD is conceived as a recipe book which can be personalised and continuously updated by apprentices based on what they perform at the workplace. For each recipe, apprentices can upload a set of pictures of their professional performance, taken through a smartphone. In-company supervisors can comment on apprentices' reflections, giving contextualised and focused feedback. People using the e-DAP more achieved better final grades in their exams, both in the theoretical and practical parts (Mauroux et al., 2016).

Digital technologies are increasingly being used in the context of validation of non-formal and formal learning; this is illustrated with experiences from the Netherlands and Poland. In the Netherlands, it is used to ensure smoother data sharing between institutions involved in the procedure. For example, digital tools are used to record the results of the external examiner's assessment and send the results directly to the VET institution and employer for validation (Broek, 2022). In Poland, the e-portfolio method has been promoted <sup>(49)</sup> among validation institutions, many of which initially had reservations about it. This was due to the lack of experience with the e-portfolio method, doubts about its accuracy and reliability, the persistent view that traditional exams are the only trustworthy method for validating competences, and the lack of training for examiners in the use of the method. It took about 2 to 3 years to convince validation institutions to use the e-portfolio method.

---

<sup>(49)</sup> This has been done within a project commissioned by the Polish Ministry of Education and Science: Support to central government administration, awarding bodies and quality assurance institutions in implementing stage I of the Integrated Qualifications System (2016–18). Stage two was implemented between 2019-20 and stage three is ongoing (2021-22).

The trend towards the increasing use of digitally based assessment is probably the most clearly observable in the context of this study. This trend is not entirely new, as the examples from several countries show, but it was intensified in part by the COVID-19 pandemic and there is still much development in process. This is largely due to the mix of benefits and challenges associated with the adoption and use of digital assessment. A major benefit is that these technologies allow ‘the simultaneous and standardised testing of large groups and may also permit (partially) automated assessment’ <sup>(50)</sup>. Digital assessment can also broaden the scope of learning outcomes that might be verified, through the use of more and different formats such as animation and video). In order to be used, digital tools must be accepted and trusted by (VET) teachers, students, schools, quality assurance bodies, VET governance actors, which may take some time. While technologies can offer practical and time-saving solutions, this might not be the case for all occupational sectors represented in VET (the assessment in a simulated environment might not be sufficient), nor for all students (as there are inequalities in terms of accessibility and connectivity) and possibly not for all teachers (since some of them may require additional training). The concerns about fairness and objectivity of exams carried out remotely persists among a broader group of key VET stakeholders. Thus, it will be crucial to underpin digital-based assessment with quality assurance principles agreed among the national key stakeholders.

#### **3.5.4. Location and authenticity**

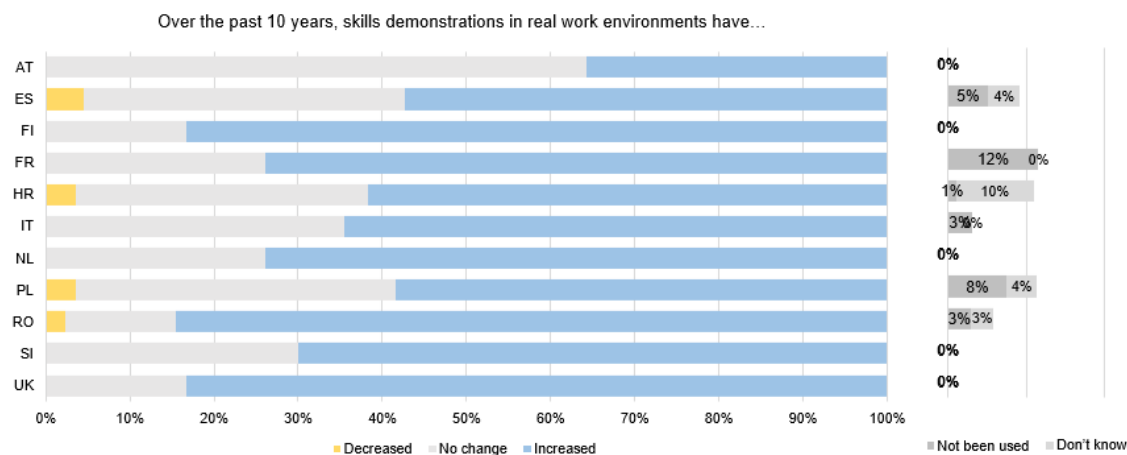
Increasing use of work-based learning in IVET can be observed in many countries and this is confirmed by the VET provider survey (Cedefop, 2022b). Results also point to a ubiquitous trend towards increased use of skills demonstrations in real work environments for most countries, which shows a greater focus on authenticity in assessment. This trend is most pronounced in Romania, Finland and the UK, with more than 80% of respondents indicating an increase over the past 10 years. Austria is the only country where a high number of respondents (about 65%) indicate that the use of skills demonstrations in real work environments has remained rather stable. This can be explained by the fact that in the school-based and the work-based VET tracks the final examination is usually not done at the workplace.

---

<sup>(50)</sup> Lohmeyer, N. and Velten, S. (2019). [The ASCOT+ research and transfer initiative launches with six projects](#). BWP, No 6.

Figure 12. **Changes related to the use of skills demonstrations in real work environments**

Source: VET provider survey. Data from selected countries. n = 893.



Romania has the highest percentage of respondents reporting an increase, following a change introduced a couple of years ago. In 2017, the methodology for the certification exam for qualifications at EQF level 3 (including 3-year professional programmes with a significant part of work-based learning providing graduates with a professional qualification of a skilled worker) was revised and a skills demonstration component (practical examination) was introduced in order to increase the certificate's relevance to the labour market (see Cedefop, 2019, p. 45).

Finland and the Netherlands are (together with Romania) among the countries where a clear trend towards both increased workplace learning and increased use of skills demonstrations in real work environments can be observed; in both cases, challenges have also been identified:

In Finland, vocational skills demonstrations were adopted as a new form of assessment as part of the reforms in the beginning of the 2000s. Since the latest reform of 2018, the main assessment method in VET has been demonstrations given in authentic work situations. These entail performing work assignments relevant to the vocational skills requirements in the most authentic settings possible – preferable arranged as part of on-the-job learning periods – which are designed, implemented and assessed in cooperation with representatives of the world of work (e.g. Poikela, 2004; Räisänen and Rökköläinen, 2014; Rökköläinen and Ecclestone, 2005; Stenström, 2009; Stenström and Virolainen, 2014; Stenström et al., 2006; 2015). The legislation of 2017 (*Laki ammatillisesta koulutuksesta* 531/2017) stipulates that students must show their competences in authentic work situations and work processes (*näyttö*); the goal of the demonstrations is to show how well the student commands the core occupational



skills defined by the qualification requirements. The competences defined in the common parts of the qualification requirements (general studies) may be shown in other ways (*Laki ammatillisesta koulutuksesta* 531/2017, §52). Students with special needs are entitled to show their competence in other ways, different from demonstration in authentic situations (Virolainen, 2022). It is generally possible to organise the demonstration elsewhere if there is a justified reason for that (*Laki ammatillisesta koulutuksesta* 531/2017, §52). For example, in social and healthcare, on average 94% of demonstrations were conducted in the workplace, 5% in both the workplace and vocational institutions, and 1% in vocational institutions only (Kilpeläinen, 2021, p. 35). However, for some specialisations within the field, such as chiropody, the number of demonstrations in the VET institution (32%) or in a combination of workplace and VET institution (14%) was relatively high, while only 54% of demonstrations took place in the workplace (Kilpeläinen, 2021, p. 36).

In the Netherlands, with the changes in the qualification structure and the qualification files in 2016, increasing emphasis has been placed on assessment in the real occupation context, instead of in the school or a simulated work environment. Although VET institutions in the Netherlands sometimes have at their disposal extensive simulation environments, which allow them to provide an authentic work situation <sup>(51)</sup>, usually the authentic work environment is secured by having the examination take place in the workplace. For the work-based pathway (*bb*) this is done in the company in which the student learns and works, for the school-based pathway (*bo*) this is done in the company where the students do their internship (Broek, 2022). Several challenges were identified when implementing this approach (Netherlands, Inspectie van het Onderwijs, 2016):

- (a) the lack of a clear vision of assessment in a real occupational context;
- (b) the limited possibilities to carry out the assessment in a real occupational context in all cases;
- (c) dealing with diversity in companies and maintaining comparability of assessment in a real occupational context;
- (d) ensuring independent and objective assessment;
- (e) ensuring the quality of the external examiners;
- (f) the difficulties of VET schools in keeping track of the assessments (as teachers are not always present during the examination at the workplace).

Challenges related to the assessment of work-based learning were also identified in Ireland, addressed in a consultation green paper on assessment

---

<sup>(51)</sup> See the [restaurant and hotel facilities of VET institution De Rooi Pannen](#), where real guests are served.



(Ireland, QQI, 2018) <sup>(52)</sup>. The paper identified existing guidance for VET providers which lists six categories of valid and reliable assessment techniques as assignment, project, portfolio, skills demonstration, examination and learner record. The consultation suggested that learner journals (to self-document learning), demonstration of competence, and portfolios of work were particularly useful in a workplace context. The possibility of developing sectoral protocols and reference assessments was raised in the paper. The question of how to increase industry engagement in discussions on assessment was also raised. It is not clear that there has been any significant follow-up activity to date, but issues remain under active consideration.

Despite these challenges, there is a clear trend towards increasingly conducting VET exams in real workplaces to achieve a high level of authenticity and to ensure the credibility and relevance of the qualifications awarded to the labour market. This development is also one of the five emerging trends related to assessment practices and policies in VET identified by Psifidou (2014, pp. 144-145), who refers to reforms (e.g. in Germany, France, Romania, Slovenia) related to ensuring ‘the validity of assessment methods for judging the ability of learners to be competent in a given work situation.’

### **3.5.5. Assessors**

#### *3.5.5.1. Involvement of employers in assessment*

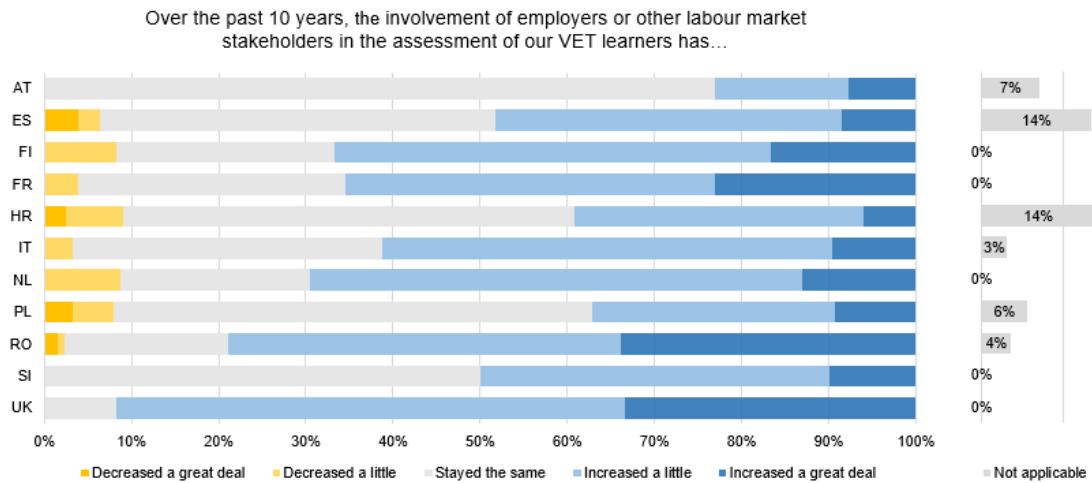
Cedefop (2022b) points to increased cooperation between VET institutions and local/regional employers. The evidence from the VET provider survey shows that the extent of the involvement of employers or other labour market stakeholders in the assessment of VET learners has been quite stable over the past 10 years. This is the case notably for Austria (71%) followed by Poland (52%) and Slovenia (50%). As Figure 13 shows, more than 60% of the respondents from the following countries noted an increase in this regard: France, Italy, the Netherlands, Romania, Finland and the UK.

---

<sup>(52)</sup> The Green papers on assessment (Ireland. QQI, 2018) and Qualifications (Ireland. QQI, 2020) formally initiated consideration of assessment in work-based settings and the potential role of occupational profiles.

Figure 13. **Changes related to the involvement of employers or other labour market stakeholders in the assessment of VET learners**

Source: VET provider survey. Data from selected countries. n = 893.



The strongly emphasised increase in employer involvement in the case of the UK may be related to the increasing replacement of apprenticeship frameworks through apprenticeship standards from 2017 onwards. 'Apprenticeship standards are designed by employers (or groups of employers), are less specific and less prescriptive with respect to what is to be learnt, do not need to contain a qualification, and require an end point completion (undertaken by an end point assessment organisation) to determine whether the apprentice has achieved the required level of competence' (Cedefop, 2022, forthcoming-a, p. 53).

In Finland, the assessment of common and vocational studies/knowledge and skills began to differentiate in the 1990s, as workplace learning started becoming more widespread; in addition to assessment carried out by teachers, workplace representatives began to take part in assessing vocational studies. The trend of common studies being assessed by the teacher(s) and vocational studies by the teacher together with workplace representatives has continued; more detailed provisions on these practices were included in the statutes in 2017, such as regarding the number of assessors and their competence. According to the regulations, the assessment of vocational skills demonstrations is done by two assessors nominated by the VET provider. In the field of social and healthcare, for example, the assessment grade was typically decided by a teacher and a representative of the employer together (94%), whereas teacher alone (4%) or two teachers (2%) or representative of the employer (1%) deciding the grade rarely (Kilpeläinen, 2021, p. 36).

In Italy, the growing involvement of companies in delivering formal contents in regional IVET gives company tutors responsibility for formulating student assessments to be assumed as valid by training institutions (Vergani, 2021).

In Poland, the involvement of employers in VET examinations is still limited but there are attempts to increase it. Since 2018/19 it became obligatory for all VET schools providing education in a given occupation to set up formal cooperation with employers (Cedefop, 2022b). One of the measures introduced requires vocational schools to organise formal collaboration with relevant employers, including for the organisation of vocational exams. To 'increase employer involvement in designing exams, the central examination agency, responsible for VET exams, has been setting up what are called national teams of experts for every occupation. In every team, the presence of an employer's representative is mandatory' (Reegård and Dębowski, 2020, p. 334).

In countries that were covered in the VET provider survey, changes in employer involvement in assessment can be observed, as the following examples show. The Bulgarian VET act (as amended in 2016) strengthened employer representation in the examination commissions for professional qualification acquisition in relation to dual track programmes. Besides representatives of the school, employer and employee organisations, these commissions must include a representative of the specific employer partnering in the dual track programme. Also the [new Lithuanian procedure for the assessment of acquired competences](#) (approved in 2020) foresees the involvement of employers in assessment processes. Professional practitioners from companies of the qualification being assessed will contribute to ensuring the quality of the tasks to be performed by the candidates.

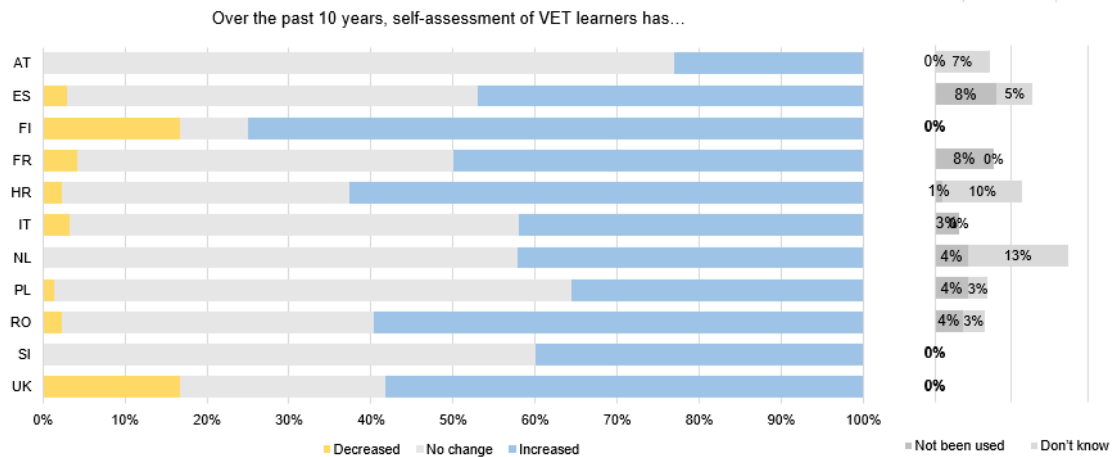
The role of employers or other labour market stakeholders in the assessment of VET learners has been strengthened in recent years. This is closely related to the trend described above of conducting assessments increasingly in real workplaces in authentic environments.

#### 3.5.5.2. *Involvement of learners in assessment*

Learners can be included in the assessment, either in terms of self-assessment or assessment of their peers. The *Prospective report on the future of assessment in primary and secondary education* (European Commission, 2020a) even identifies the growth of the role of students in assessment as one of the probable shifts by 2030. Also, the VET provider survey points to increasing use of learners' self-assessment over the past 10 years. This trend is most pronounced in the case of Finland (75%), UK (58%), Romania (56%) and Croatia (55%), as shown in Figure 14.

Figure 14. **Changes related to the use of self-assessment by VET learners**

Source: VET provider survey. Data from selected countries. n = 893.



In Finland, where the increase was most strongly indicated, some of the respondents also pointed to a fall in learner self-assessment in vocational education. This could be explained by the changes in what is considered for the grades. The vocational skills demonstrations, introduced in Finland in 2006, also involve the student in the assessment process: following the skills demonstration, the student, the teacher and the work-place representative discuss the final assessment and the grade the student will receive. The grade itself is decided through finding a consensus between the parties involved, so student self-assessment is also included in this process. According to the latest substantial reform of VET *Laki ammatillisesta koulutuksesta* (Law on vocational education and training, 531/2017), students have to have an opportunity for self-assessment, but this does not have to be taken into account in the grades given (Virolainen, 2022).

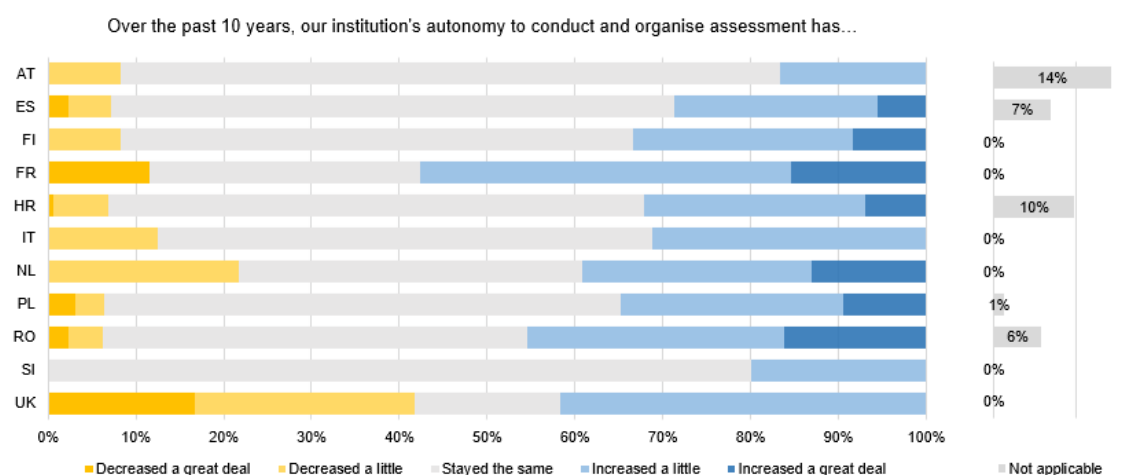
Despite the implied increase in VET learner self-assessment, not much evidence was found of this. This might be related to the fact that learner self-assessment is used more in formative than in summative assessment approaches. It is linked to the learner-centred approach, which gives learners more responsibility for learning and for monitoring their progress, as the examples from France and Slovenia show. In France, 50% of the respondents indicated an increase in the use of learner self-assessment; in a recent publication this is linked to the assessment of transversal competences. The authors point to experiments with new methods of assessment being conducted in some places, which seem better suited to these competences. This is the case in France with self-assessment methods based on record books, personal dossiers and portfolios compiled by candidates, all of which help to make them aware of what they have learned and to make it visible (Galli and Paddeu, 2021, p. 4). For most Slovenian

respondents in the VET provider survey (60%) there has been no change in self-assessment of VET learners over the past 10 years. This observation can be connected to findings from the [second evaluation of the apprenticeship system in the country](#) (conducted in 2019). The evaluation focused on the challenges of assessment in apprenticeships and revealed that the involvement of apprentices in the monitoring of their progress and the assessment of their competences could be improved. ‘Apprentices should participate more in monitoring their own progress. There is a lack of awareness among teachers and mentors of the importance of reflecting on one's own learning, both in terms of motivation and learning performance, as well as in terms of the ability to build one's own career. To achieve a greater level of tailoring and participation, apprentices should be empowered with an individualised apprenticeship plan and self-monitoring tools’.

### 3.5.6. Organisation of assessment

The results of the previous research phases indicate that the autonomy of VET institutions has increased in most countries, taking into account the different starting positions in this respect (Cedefop, 2022b; 2022, forthcoming-a). In relation to the VET providers’ autonomy to conduct and organise assessment, the picture is a bit different: only in France more than 50% of respondents indicated that they perceive an increase in the autonomy of their institutions in relation to assessment; in most of the countries that are the focus of the survey, most respondents spoke of a stable situation in this respect, as Figure 15 shows.

Figure 15. **Changes related to institution's autonomy to conduct and organise assessment**

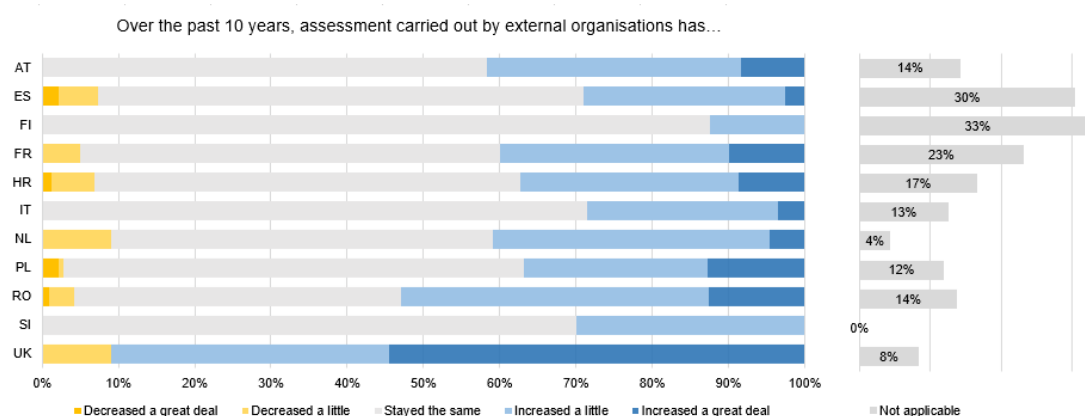


Source: VET provider survey. Data from selected countries. n = 893.

However, it is also noticeable that a declining trend in this regard is indicated for some countries, especially for the UK (more than 40% of respondents) and relatively strong also for the Netherlands (more than 20% of respondents). For the UK, this can be explained by the increasing tendency to have the assessment carried out by external organisations, which was indicated by more than 90% of the respondents, as Figure 16 shows. In this case the reported reduction in autonomy (by more than 40% of UK respondents) goes along with an equally large share of respondents who reported an increase in autonomy. The survey data provides no further explanation of this response pattern, other than it being a signal of a large extent of change observed in the country with no unequivocal direction.

Survey data general indicates an overall increase in assessment carried out by external organisations across all countries, although it is only in Romania and the UK where a majority of respondents observed such increase. This question was considered not particularly applicable to a significant share of respondents in several countries. For France and Romania, survey results indicate that the increase in autonomy (observed by more than 40% of respondents) is accompanied by a comparable increase in external assessment <sup>(53)</sup>.

Figure 16. **Changes related to assessment carried out by external organisations**



Source: VET provider survey. Data from selected countries. n = 893.

In the Netherlands, the autonomy of VET providers has increased, as has their responsibility for assessment. While they were given this responsibility from the start of the Act on VET and adult education (WEB) in the mid-1990s, they still have to develop the maturity level to take the autonomy and responsibility. At the same time, examinations are being outsourced to external institutions and centralised examinations have been developed for Dutch, English and Arithmetic (Broek, 2022). The evolvement of assessment in the Netherlands shows an approach of

<sup>(53)</sup> This can also be observed at the level of individual institutions.

standardising examinations while at the same time strengthening the decentralisation of assessment (except for some general education subjects <sup>(54)</sup>). Further insights are presented in Box 17.

**Box 17. Strengthening standardisation and centralisation of assessment in VET in the Netherlands**

The enforcement of the act on VET and adult education (*Wet educatie en beroepsonderwijs, WEB*) (Netherlands. Ministerie van Onderwijs, 1995) has led to harmonisation of the assessment approach, as assessment was previously dominantly organised at sectoral level, with national sectoral organisations playing a large role in organising the examinations. The WEB introduced a national qualification structure and learning outcomes (*eindtermen*) were defined centrally for each qualification; these learning outcomes were considered as the common reference for the assessment process (IVA, 2012, p. 14).

At the same time, the VET schools became responsible for the organisation, preparation and implementation of exams and the awarding of diplomas; in many cases, they made use of external assessment organisations (that used to conduct the sectoral central exams in the apprenticeship systems) to validate the assessment externally (Broek, 2022). VET schools, supported by the ministry, developed their own agenda to improve the quality of examination (Netherlands. MBO Raad et al., 2015), focusing on increasing the quality and validity of the examination tools, strengthening the examination boards in the VET schools, and improving the professionalism of those involved in conducting exams.

In 2019, [Stichting validering examens mbo](#) (VEMBO) was established to guarantee the quality and validity of exams (both those developed by exam suppliers and those developed jointly by VET schools). However, a recent publication points out that, while the use of centrally developed and externally purchased examinations has relieved vocational teachers of their (examination) duties, in the process it has also reduced their engagement and professionalisation in the examination system and their involvement in vocational education in general (Netherlands. Onderwijsraad, 2018, p. 22). Though the WEB stimulated the autonomy of VET schools, after 25 years of development this is under pressure as a result of outsourcing examinations to external institutions and centralised examinations.

Source: Broek (2022).

In Poland, the process of externalisation and centralisation of assessment dates from the 1999 reform, when the Central Examination Board and eight regional examination boards were established, responsible for designing and conducting general and vocational external examinations <sup>(55)</sup>. The fact that it has

---

<sup>(54)</sup> To improve the transition from VET to higher education, central examinations in some subjects (Dutch language, basic maths, English) were introduced from 2014.

<sup>(55)</sup> Initially, this was done based on an examination standard issued by the Ministry; since 2012, the assessment is based on the learning outcomes defined in the core curriculum.



been a relatively long time since they were introduced could be the reason why less than 40% of the Polish respondents of the VET provider survey stated that assessment carried out by external organisations has increased over the past 10 years. Box 18 provides further insights into these developments.

**Box 18. Externalisation and centralisation of assessment in Poland**

The first round of VET examinations organised under the external examination system in Poland was held in 2004, with an internal examination organised by the VET school leading to a school-leaving certificate and an external examination leading to a VET certificate. Since 2004, the system of external VET examinations has undergone some changes, but the logic and the basics have remained the same:

- (a) all VET learners take the same examination in a given profession (usually at the same time nationwide);
- (b) all examination papers are marked by accredited by regional examination boards) and trained professional raters (examiners) according to the assessment criteria set at national level;
- (c) the VET examination consists of a written part (in the form of a test) and a practical part;
- (d) the VET examination leading to a VET qualification is based on the learning outcomes of the VET core curricula;
- (e) the general education component is not assessed by external examinations.

Currently, Poland has external standardised examinations at the end of primary school (eighth grade examination) and upper secondary school (*matura*), as well as for obtaining vocational certificates and diplomas.

‘From 2020, the VET exam will be mandatory for learners in all VET schools, which means that if a person does not participate in the VET exam, he/she cannot be promoted to the next class level and cannot obtain the certificate of school completion. The vocational examination system was recently co-funded with the Ministry of Labour fund. The Ministry of Labour will cover almost 40% of the total cost of VET examinations in Poland’ (Reegård and Dębowski, 2020, p. 334).

However, the consequence of this is that internal assessment at school level loses importance.

Source: Dębowski (2022).

There are only a few countries with externally designed or conducted (standardised) final examinations; many countries use mixed forms of external and internal examinations <sup>(56)</sup>. Only in Switzerland is an internally organised examination model used at upper secondary level (Petanovitsch and Schmid,

---

<sup>(56)</sup> There are also a few countries which do not provide for final examinations at upper secondary level (in Europe, these include Belgium, Greece, Norway, Spain and Sweden) (Petanovitsch and Schmid, 2020, p. 16).



2020, p. 15). In most countries, it is the written final examinations that are centrally administered. An exception is Ireland, where the oral examinations are also centrally administered and which can generally look back on a long tradition of centralised final examinations which have existed since the end of the 19th century (Petanovitsch and Schmid, 2020, p. 16).

This trend to a higher degree of standardisation and centralisation of final assessments can be observed in several European countries, as the following examples of more recent reforms show.

- (a) In the Austrian school-based IVET system, this is due to the introduction of a partially standardised competence-oriented upper secondary school-leaving exam in VET colleges (starting with the 2015/16 school year), comprising a diploma thesis (including its presentation and discussion), standardised forms of written exams in German, modern foreign languages, and applied mathematics and oral examinations (Germany. BMBWF, 2022b).
- (b) In Croatia, the State *matura* as a standardised national final exam was conducted for the first time in the school year 2009/10. This is a final examination at secondary level II and is compulsory for all students of general education schools as well as for VET students who wish to continue to higher education. The State *matura* exam is conducted in general education subjects only, as obligatory (Croatian language, mathematics and foreign language) and optional exams <sup>(57)</sup>. Since 2009, general skills have no longer been part of the final exam for programme completion in IVET. The assessment of vocational skills is conducted internally, at the school level, by school teachers, and externally at employer's premises (students' final practical assignment/exam). Before the implementation of the State *matura* exam, national exams for VET students were conducted during three consecutive school years (2006-09) and are currently only used in selected programmes (Pavkov, 2022; see Box 19).
- (c) In Hungary, based on new regulations from 2020, training and examination in the new VET system are separated. The final VET exams will be organised and conducted by independent accredited examination centres, in accordance with the criteria set out in the training and learning outcome requirements <sup>(58)</sup>.

---

<sup>(57)</sup> The State *matura* is considered the standard, the minimum level of knowledge that students must acquire. This leads to some teachers not teaching beyond these minimum requirements, which can be seen as a negative effect (Pavkov, 2022).

<sup>(58)</sup> Information received from Éva Farkas (email, 22 February 2021).

**Box 19. National exams for general care nurses in Croatia**

In Croatia, national exams were introduced and piloted in the 4th study year for VET students from 2006 to 2009 (in Croatian language, mathematics and foreign language) as a preparation for the introduction of the State *matura* exam in 2008 (Croatia, National centre for external evaluation of education, 2018). They were conducted in primary and secondary schools, including VET schools, with the following aims:

- (a) to obtain valid and comparable information on student performance for formative evaluation of student work;
- (b) for setting norms and standards of evaluation;
- (c) to provide feedback to schools with a view to evaluating and improving the quality of their work;
- (d) to prepare students and teachers for the State *matura* exam;
- (e) to develop external evaluation methodology with the aim of monitoring students' achievement over the years.

National exams were organised and conducted by the National centre for external evaluation of education and they were in the form of written tests; occupation-specific and transversal skills were not assessed. After the first three rounds of assessment, the national exams in VET were not continued, with the exception of general care nurses and IT technicians.

The general nursing qualification at EQF level 4 is acquired based on 5 years of initial VET and offers the possibility of transition to higher education. The first 2 years focus on general education, followed by 3 years of vocational training<sup>(59)</sup>. The development and testing of national examinations in theoretical subjects for general care nurses began in 2011, and VET institutions have been conducting the examinations regularly since 2015.

From 2017 to 2019, national examinations for IT technician (4-year vocational training), salesperson (4-year vocational training) and general care nurse (5-year vocational training) were conducted only in theoretical subjects. 'Although voluntary, 97% of all final-year learners took the theoretical exam in 2018. [...] From 2017/18, higher education providers in nursing have begun to include the national exam results in their enrolment criteria' (Cedefop, 2020d, p. 54).

As a shift from a theoretical towards a skills-oriented approach and as part of the external evaluation in education, it is intended to introduce national skills exams in IVET programmes. In 2018, the first national skills exams for the general care nurse qualification were developed and piloted, assessing competences acquired in the compulsory vocational training modules for the general care nurse profession.

Source: Cedefop (2020a, HR, p. 6); Pavkov (2022).

---

<sup>(59)</sup> The programme is school-based and has a specific structure that differs from other VET programmes in Croatia. It was launched in 2010/11 with the aim of meeting the European regulation on training requirements for nurses responsible for general care (Cedefop, 2020d).

There is a trend toward greater centralisation and externalisation and thus standardisation of assessments. This primarily affects final examinations leading to the award of qualifications, particularly written examinations and the assessment of general subject knowledge. Internally conducted examinations, however, still play a role during vocational training.

### 3.6. Aligning learning outcomes, delivery mode and assessment

Here we first look at the VET provider survey data and analyse it for possible coherence in trends related to intended learning outcomes, delivery mode and assessment. Survey respondents were asked to think about the implications of changes observed in the delivery and content of VET over the past 10 years. They were asked to select the three most important implications observed for their institutions from a list of options, one of them referring to changes in the way assessment is conducted. Survey results suggest that changes in the way assessment is conducted were among the key implications identified in about half of the countries (Croatia, Finland, the Netherlands, Spain and the UK). This indicates that changes in assessment have been an important aspect of change in VET systems, though clearly not the most prominent one, as illustrated in Figure 17 <sup>(60)</sup>.

Figure 17. **Implications of changes in delivery and content of VET over the past 10 years (top four per country)**

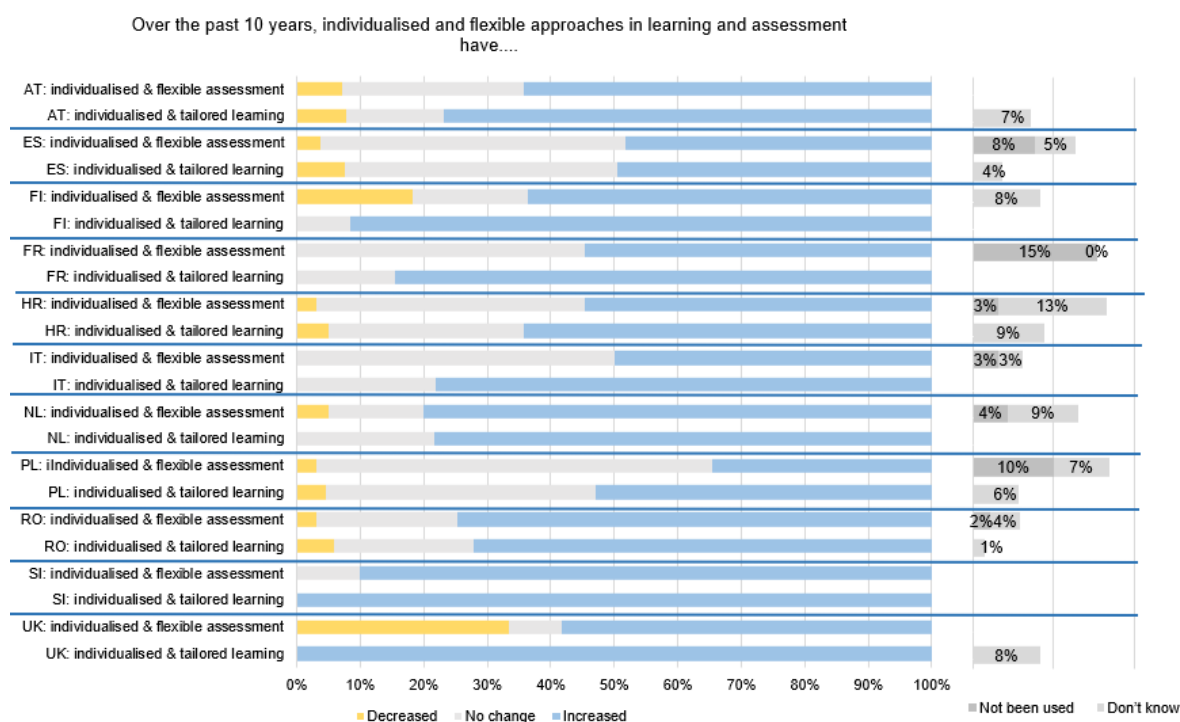
	AT	ES	FI	FR	HR	IT	NL	PL	RO	SI	UK
New roles or tasks for teachers/trainers											
Recruitment of teachers / trainers with new skill sets											
Investment* in new equipment											
<b>The way assessment is conducted</b>											
Investment in CPD											
Variety of programmes or qualifications											
Overall number of teachers / trainers											
The way the institution is funded											

Source: VET provider survey. Data from selected countries. n = 893; \*excluding routine replacement.

<sup>(60)</sup> Changes in assessment ranked fourth, behind new roles or tasks for teachers/trainers, recruitment of teachers/trainers with new skills sets and investment in new equipment.

Reported increases in individual and tailored learning tend to be accompanied by reported increases in individualised and flexible assessment; however, in nine out of 11 countries, the shares of respondents reporting an increase in individual and tailored learning exceeds that of increases in individualised and flexible assessment.

Figure 18. **Change in the use of individual and tailored learning and individualised and flexible assessment**

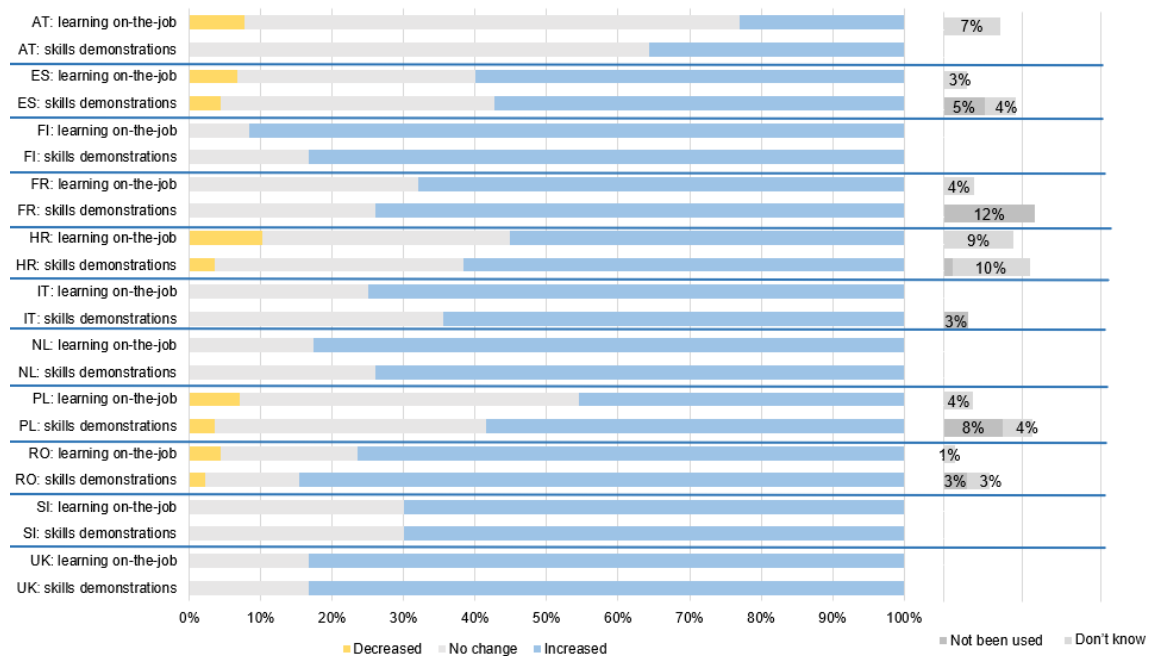


Source: VET provider survey. Data from selected countries. n = 893. 'Not been used' only available as option for the question on individualised and flexible assessment.

Observed changes in the extent of learning at work or on-the-job, and in the use of skills demonstrations in real work environments, show similar shares between the two variables per country for most countries. This indicates that the assessment approach (assessment in authentic environments) is generally aligned with the learning approach (work-based learning).

**Figure 19. Change in the extent of learning at work or on-the-job, and in the use of skills demonstrations in real work environments**

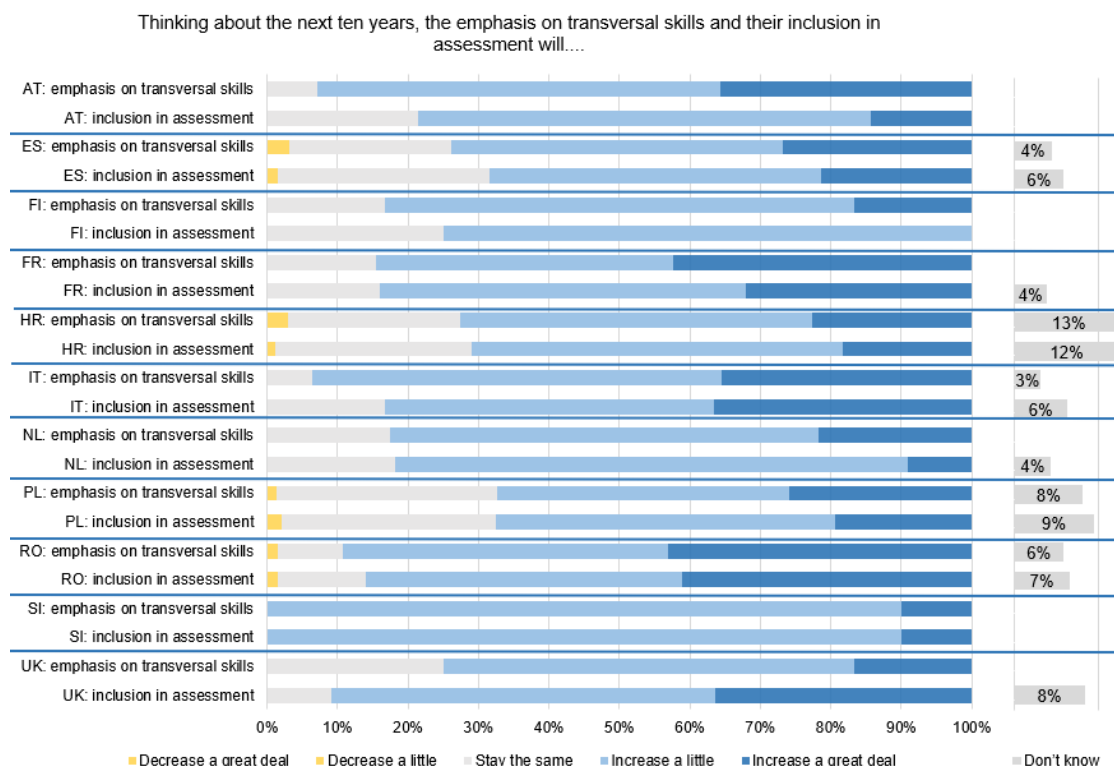
Over the past 10 years, the extent of learning at work or on-the-job and the use of skills demonstrations in real work environments have....



Source: VET provider survey. Data from selected countries. n = 893. 'Not been used' only available as option for the question on individualised and flexible assessment.

The expected changes in the emphasis on transversal skills and their inclusion in assessment confirms at least the overall trend. Shares between the two variables per country are also similar.

Figure 20. **Expected change in the emphasis on transversal skills and their inclusion in assessment**



Source: VET provider survey. Data from selected countries. n = 893.

These results of the VET provider survey indicate a degree of coherence between intended learning outcomes, delivery and assessment. The remainder of this chapter presents some country examples to illustrate what efforts countries are taking in their quest for alignment.

VET exams in Poland are based on the learning outcomes included in the VET core curriculum (introduced in 2012), which is the major reference document for schools in designing the learning/teaching programme and for central and regional examination boards. Experts who design the content of exams on behalf of these boards must analyse the learning outcomes of the core curriculum to decide what the spirit of each occupation is: which learning outcomes are relevant, which are crucial, and which of these are commonly used in the performance of occupational tasks. This work is done to decide on the general logic and rationale of a VET examination in a particular occupation, and to ensure the construct validity of an examination. Authors of exam content must directly map each element of an exam that is graded (both in the written and practical parts) to specific learning outcomes and assessment criteria of the VET core curriculum. Figure 21 shows an extract from a grading scheme used for the practical part of the vocational examination for the qualification GIW.02. underground mining. Each

element of the assessment scheme indicated as R.1.1 has an assigned number and the name of the learning outcome unit, the number and the name of the learning outcome and the assessment criterion; all this is defined in the VET core curriculum.

The effort to align qualifications or curricula, delivery and assessment also raises the question of in what detail the learning outcomes used as reference are to be described, to what extent learning and competence acquisition are actually pedagogically supported in this approach, or what room there is for interpretation and adaptation. In Finland, for example, there are also critical reflections on this (Virolainen, 2022). The development towards more detailed qualification requirements started at the beginning of the 2000s, when vocational skills demonstrations were adopted as part of IVET (Haltia, 2006; Isopahkala-Bouret, 2013). This approach enabled assessment in authentic work practices, giving priority to practical skills, and more concrete and targeted assessment aligned with the qualification requirements. At the same time, it was criticised that the vocational skills demonstration draws attention to external behaviour and focuses on the skilful performance of limited tasks, which narrows and instrumentalises learning instead of creating space for students' self-directed knowledge construction and goal setting. It was also pointed out that, although explanation of the competence criteria makes them transparent, it is not possible to give comprehensive criteria and the criteria can inevitably be interpreted in many ways. Further, contextual and situational factors must vary to some extent, despite all efforts to specify assessment criteria in detail to ensure similar performance competence (Isopahkala-Bouret, 2013).



Figure 21. Relationship of the assessment criteria and learning outcomes defined in VET core curricula in Poland

Name of a qualification:		Underground mining (GIW.02)						
Lp.	Examiner: • Assess the candidates' work honestly and with commitment. Document the results of the assessment. • Use the adopted rules of assessment objectively. • If the test taker, while completing the examination task, obtains different results or obtains the desired results in a different way than specified in the grading rules, or presents an unusual solution, but in accordance with the art of the profession, continue to evaluate in accordance with the criteria included in the grading rules. Information that the assessment rules do not provide for the situation that has arisen should be immediately provided in the form of a written note to the Chairman of the Examination Team with a request to forward it to the District Examination Commission. The note can be handwritten in draft mode. • Inform the chairman of the supervisory team about all irregularities that occurred during the examination, in particular about violations of occupational health and safety regulations and	Number of points for meeting the criterion	Number of unit of learning outcome  (wypełniane automatycznie)	Name of the unit of learning outcome  (wypełniane automatycznie)	Number of learning outcomes  (wypełniane automatycznie)	Name of learning outcomes  (wypełniane automatycznie)	Number of assessment criterion  (wpisać np. 1.6.2)	Name of assessment criterion  (wypełniane automatycznie)
Elementy podlegające ocenie/kryteria oceny								
R.1	Result 1: Secure workplace	16						
R.1.1	A beacon aligned with the track axis	4	1.	czystość i higien	1.6	organizuje stanowiska	1.6.5	roby środowiska
R.1.2	The first sleeper placed on the rails perpendicular to the track axis	4	5.	widacja podziem	5.5	wykonuje roboty	5.5.1	obisk górniczych
R.1.3	The second sleeper rests at one end on the first sleeper and is inclined towards the possible entry of the rolling stock	4	5.	widacja podziem	5.5	wykonuje roboty	5.5.1	obisk górniczych
R.1.4	The sleepers are stably connected with each other with two carpentry clamps	4	5.	widacja podziem	5.5	wykonuje roboty	5.5.1	obisk górniczych
R.2	Result 2: Condition of the pit lining	12						
R.2.1	Built-in and tightened stabilizing struts	4	5.	widacja podziem	5.5	żeniem i utrzyma	5.5.6	je stan obudowy
R.2.2	Struts connected in straight lines	4	5.	widacja podziem	5.5	żeniem i utrzyma	5.5.6	je stan obudowy
R.2.3	Stirrups tightened with the torque specified in the workplace manual	4	5.	widacja podziem	5.5	żeniem i utrzyma	5.5.6	je stan obudowy
R.3	Result 3: Condition of the railway track	42						
R.3.1	New track sleeper laid in place of the damaged track sleeper removed	4	6.	dobywanie kopa	6.4	ane z transporter	6.4.5	ym i oponowym
R.3.2	The sleeper is arranged symmetrically in relation to the track axis	4	6.	dobywanie kopa	6.4	ane z transporter	6.4.5	ym i oponowym
R.3.3	Track pads placed under both rails	4	6.	dobywanie kopa	6.4	ane z transporter	6.4.5	ym i oponowym
R.3.4	Each rail is twisted with two screws on the inside of the track	4	6.	dobywanie kopa	6.4	ane z transporter	6.4.5	ym i oponowym
R.3.5	Each rail is turned with one screw on the outside of the track	4	6.	dobywanie kopa	6.4	ane z transporter	6.4.5	ym i oponowym

Source: (Dębowski, 2022) (based on Central Examination Board materials, own translation).



The Dutch case study explored the alignment of intended learning outcomes, delivery mode and assessment in VET and the scope for adjustments (Broek, 2022), and is presented here in more detail. Alignment has been a key topic since the introduction of the act on VET and adult education (*Wet educatie en beroepsonderwijs, WEB*) (Netherlands. MBO Raad et al., 2015). It also relates to the growing autonomy and responsibility of VET providers. In general, the core tasks and work processes described in the qualification files are the reference for both VET delivery and assessment. While the VET school has the autonomy to design the way of delivery and decide on the way of assessment, it must provide evidence that this is in line with the descriptions in the qualification files. Currently, VET institutes have three options for arriving at assessment tools that meet validity requirements (Netherlands. Validering Examens MBO, 2018):

- (a) route 1: purchase exams from a certified provider;
- (b) route 2: self-construct exams based on collective agreements;
- (c) route 3: external validation of self-constructed exams.

The quality of the alignment of intended learning outcomes and assessment is assured for each of these routes through the external certification of the examination tools. There are specific procedures and rules the external assessors have to follow to certify an examination tool, looking both at the examining institution and the examination tool itself (Netherlands. Validering Examens MBO, 2017). The coherence of exams between VET schools is assured as a result of following these routes: they use the same exams, either purchased from exam suppliers or developed jointly by VET schools.

However, this also raises the question of the available scope for adaptations, even if it is not always obvious at first glance how to interpret the stated learning outcomes in a way that can be met by students with special needs (e.g. loading a wheelchair for someone in a truck) (Netherlands. MBO Raad et al., 2018; Stoutjesdijk and Broek, 2016). The specific case of adapting examination practices for students with special needs is a test case for VET schools and the inspectorate in terms of the scope for adapting examinations and interpreting learning outcomes <sup>(61)</sup>. Adjustments in connection with the occupation-specific exams, organised decentrally by the VET schools, are indeed possible and need to be approved by the examination board of the VET schools. These decisions can then be reviewed by the inspectorate. There are three ways of adjustment (Kennispunt MBO Onderwijs & Examinering and Expertisecentrum Inclusief Onderwijs, 2020).

---

<sup>(61)</sup> This issue continues to be the subject of heated debate and requires deliberation and discussion, as evidenced by the attendance of more than [300 representatives of vocational schools at a recent conference on this topic](#) (27 January 2022)

- (a) Adjustment of the conditions for examination (including allowing support tools): for example, an exam can be split in parts for a student with chronic fatigue syndrome. This type of adjustment usually does not lead to challenges and discussions.
- (b) Adjustment of the form and content of the examination: this concerns the use of a technique or tool that is not specified in the qualification file. For example, a one-armed student in hospitality might use a special tray to serve drinks. This is about interpreting the learning outcomes described and seeing to what extent an adaptation still meets the learning outcomes.
- (c) Adjustment by which the requirements of the qualification file are no longer met: for example, a student in training as a healthcare assistant cannot lift and wash patients due to chronic fatigue syndrome and muscular problems. In this case, the VET school issues a statement that the student meets all the requirements except those concerning heavy physical work. This type of adjustment can be problematic as it could undermine the value of the qualification in the labour market as evidence that the holder is able to perform a range of core tasks.

Adaptation must strike a balance between, on the one hand, enabling completion and equal opportunities and, on the other hand, ensuring that a VET qualification remains a point of reference in the labour market for all entrants. The adaptation of the examination is therefore not only an education issue, but also has to do with confidence in the qualifications on the labour market. Therefore, this is also a concern for the admission process for students with special needs in VET programmes. Already at this stage it has to be assessed whether the student will be able (and in what way) to fulfil the requirements described in the qualification file (Stoutjesdijk and Broek, 2016). VET schools can sometimes turn to the established *Kennispunt MBO Onderwijs & Examinering* (Knowledge Point VET and Examination) for advice.

It can be concluded that countries often make considerable efforts to achieve coherence between intended learning outcomes, delivery, and assessment but they struggle to find ways to provide sufficient latitude for interpreting these learning outcomes and adapting such outcomes and assessment criteria to specific target groups.

### 3.7. Key trends: summary

Table 10 briefly summarises the key findings related to the dimensions of assessment as presented in Chapters 3.2-3.6:

Table 10. Summary of key trends related to the dimensions of assessment

	Dimensions	Trends
A. Purposes and functions	1. Purpose of assessment	Greater emphasis on formative assessment and a continuing strong focus on summative assessment approaches (the latter increasingly being used in some countries to monitor the performance of VET institutions as part of quality assurance in VET); General increase in assessment as different functions are to be fulfilled that are not mutually exclusive and can be applied in parallel.
	2. Basis for awarding a qualification	Increasing use of assessment of individual units or modules to increase the flexibility of learning pathways; A kind of pendulum movement can be observed: formerly very modularised VET systems become more holistic, others more modularised.
B. Content	3. Types of learning outcomes	Assessment of transversal competences is increasing; certain transversal competences – especially in VET – are difficult to capture externally and their assessment is very difficult to implement independently and outside of work contexts; overall, this is still a relatively open field where much is in motion.
	4. Integration or separation of different types of learning outcomes	Increasing separation of general education and vocational content – often also reflected in separate qualifications as well as separate assessment processes; External and centralised standardised forms are increasingly being used to assess general subject knowledge.
	5. Learning contexts	A clear opening of VET can be observed with increasing possibilities to have credited one's previously acquired competences (also outside the formal learning context). This has also led to expansion of assessment possibilities: entirely new examination formats have emerged and existing examination formats have become accessible to new target groups.
C. References	6. Basis of assessment	Shift to learning outcomes for describing qualifications and curricula has also strengthened the use of learning outcomes as reference for assessment. Criterion-referenced assessment is increasingly being used.
	7. Reference points to support summative assessment	Assessment specifications, particularly specifying the criteria for assessment, are increasingly being used; The use of assessment standards based on learning outcomes is also expected to increase in the future.
D. How: Methods, tools	8. Sources/ methods for collecting evidence related to theoretical knowledge	Countries have increasingly introduced various ways for collecting (mainly direct and indirect) evidence related to practical knowledge. The increasing introduction of practical final examinations or tasks, including project assignments and assessment formats that resemble real work situations, suggests greater emphasis on the use of sources and assessment methods that provide evidence related to practical knowledge.
	9. Sources/ methods for collecting evidence related to practical knowledge	There is generally more emphasis on gathering evidence of the ability to solve work-life problems than on (only) written examinations. In general, varying sources and methods are used.
	10. Internal/ external	Trend toward greater centralisation and externalisation and thus standardisation of assessments: this primarily affects final examinations leading to the award of qualifications and, in particular, written examinations and the assessment of general subject knowledge.

	Dimensions	Trends
	11. Environment	Clear trend towards the increased use of digitally based assessment (intensified in part by the Covid-19 pandemic). Overall, there is still much development going on here.
	12. Location	Clear trend to conduct VET exams in real workplaces to achieve a high level of authenticity and to ensure the credibility and relevance of the qualifications awarded in the labour market.
	13. Authenticity	
	14. Standardisation	Overall, there is no clear trend in one direction of this spectrum or the other (standardisation versus individualisation and flexibility): the developments are highly country-specific and in each case depend on the role and function associated with the assessment. A general increase in assessment can be observed.
	15. Assessors	Greater involvement of employers or other labour market stakeholders in the assessment of VET learners, strongly related to the trend of increasingly conducting assessments in real workplaces in authentic environments.
	16. Learner involvement	Implied increase in VET learners' self-assessment – but not much evidence was found in this regard (maybe because it is used more in formative than in summative assessment approaches).
E. Alignment	17. Alignment	Assessment is not always considered as one of the most important components for which implications arise due to changes in the area of content and delivery of VET. Countries often make significant efforts to achieve coherence between intended learning outcomes, delivery, and assessment. However, they also struggle to find ways to provide sufficient latitude for interpreting those learning outcomes and tailoring learning outcomes and assessment criteria to specific target groups.

Source: Cedefop.

### 3.8. Trends in quality assurance of assessment

Ensuring consistency (alignment) between the learning outcomes included in qualifications or curricula, and the way they are delivered and assessed is considered an important aspect of quality assurance in itself. In this section we focus on other (but closely linked) key efforts in the VET sector to ensure the quality of assessments, particularly the balance between reliability and validity.

Research points to a trend towards a higher degree of standardisation of final examinations as a means to strengthen reliability (see also Chapter 3.5.6 on the organisation of assessment). According to OECD (2013), concerns about quality of learning and assessment have led to a greater focus on central standards and large-scale assessments (central standardised examinations). Benavot and Tanner (2007, p. 6) observe that national learning assessments are increasingly being used and have become a common feature of national education systems around the world and Coates (2018, p. 5) states that 'standardized assessment is easily the most extensive form of development and would appear to be growing in scope and scale'. This is again confirmed by a recent international review on

examination formats for the completion of upper secondary education (including VET) and related entitlements: 'The modality of final examinations shows a clear trend towards (partially) external assessments or (partially) standardised examination procedures at the international level; this type of examination design can therefore now be described as 'state of the art'. However, the concrete forms and the extent of such standardisation of final examinations differ considerably between the countries of comparison' (author's translation from: Petanovitsch and Schmid, 2020, p. 3).

The introduction of an external assessment is sometimes justified by the need to increase the value of VET. In Poland, for example, the 'state-regulated, standardised VET system was introduced in 2004. It uses a complex qualification model underpinned by a fairly rigid end-point assessment. The central examination board has ultimate authority over all aspects of assessment. The main rationale for adopting this approach was a previously entrenched 'push to pass'. Before, most students in VET were passing, leading to a devaluation of Poland's VET qualifications' (Foundation, 2021).

There are limits to the standardisation of the practice-oriented part of a VET examination, and tensions between reliability and validity often have to be overcome by different means. For example, in Finland, these tensions are linked to the assessments based on vocational skills demonstrations and have been a topic during the past 20 or more years (Virolainen, 2022): the question of the reliability of vocational skills demonstrations has been raised from the beginning in 2005 (Haltia, 2006; Stenström et al., 2006). At the same time, it was pointed out that it is very difficult to ensure both a reliable and a valid assessment unless the assessed skill or competence is very narrowly defined (Haltia, 2006, p. 24). In Finland, when moving to the competence-based approach, it was decided that broad competence areas should be assessed (Haltia, 2006). It was pointed out that validity was particularly ensured by the fact that the assessment criteria on which the demonstrations were based were developed in collaboration with working life and that the criteria were consistent with national qualification requirements and the requirements set by working life. Authentic work tasks were used to identify the required competences. (Haltia, 2006, p. 24; see also Stenström et al., 2006). Shortcomings in this approach have also been identified: Circumstances for skills demonstrations vary: it is not possible to standardise them. Some tasks can only be performed in rare cases, or the employer's evaluating representative may have a limited view of the occupation.

In principle, employers and work-life representatives are expected to invest in vocational training and its quality by providing training places, training instructors in the workplace, and participating in the supervision and assessment of trainees.

They are also represented in working-life committees (*työelämätoimikunnat*). Their role has proven to be significant, especially as the latest reform (2015- 18) prioritises workplace learning and individual progress (Niemi and Jahnukainen, 2018). In general, their role is to assure the quality of VET and its orientation to the world of work, and their duties include:

- (a) to participate in the quality assurance of the organisation of skills demonstrations and competence assessments;
- (b) to participate in the development of the qualification structure and national vocational qualification requirements,
- (c) to deal with the students' requests for grade corrections (Finland. National Agency for Education, 2022).

It is the duty of education providers to plan the organisation of vocational skills demonstrations (*Laki ammatillisesta koulutuksesta* [Law on vocational education] 531/2017, section 53) (Parasta osaamista, 2019a). They must also have a quality management plan and continually develop their quality assurance (*Valtioneuvoston asetus ammatillisesta koulutuksesta* 673/2017 [national decree on vocational education and training]). The national agency for education has supported the adaptation to reform requirements in 2015-18 through project funding and projects. For example, the national project *Parasta osaamista* (Best competence) developed compact guidebooks for teachers, students and workplaces to support common understanding about the assessment procedures (Parasta osaamista, 2019a; b; c; Vehviläinen, 2020).

The examples from the Netherlands and Poland also show that the pursuit of quality assessment, which particularly meets the requirements of validity and reliability, is discussed over years and can lead again and again to changes in the approach.

In the Netherlands, after the introduction of the act on VET and adult education (*Wet educatie en beroepsonderwijs, WEB*) (Netherlands. Ministerie van Onderwijs, Cultuur en Wetenschap, 1995), VET schools were made responsible for organising assessment and the quality of exams was a continuous concern (Netherlands. Inspectie van het Onderwijs, 2001; Netherlands. Onderwijsraad, 2001). The lack of professional assessment expertise within the VET schools was mentioned, as well as the fact that assessments were oriented towards the reproduction of knowledge rather than the assessment of competences (which raises questions with regard to validity).

Therefore, numerous changes have been introduced related to the quality framework for exams. In 2004, a central assessment organisation (Quality Centre Examination, *KwaliteitsCentrum Examinering – KCE*) was established with uniform quality standards. However, this did not solve the quality concerns and led to

overregulation and huge administrative burdens, with limited effect on the quality of examination. In 2007, the supervision of exams shifted to the inspectorate and new quality standards were defined (IVA Onderwijs – Kennispunt MBO Onderwijs & Examinering, 2022, p. 19). The administrative burden on the part of the VET schools was still considered extensive and, in 2012, another quality framework was implemented, making supervision more proportionate <sup>(62)</sup>.

In 2011, the Ministry (Netherlands. Ministerie van Onderwijs, 2011) aimed at increasing the quality of assessment to strengthen the value of VET diplomas and proposed four measures which were only partly implemented and successful (Broek, 2022).

- (a) The introduction of central examinations of the listening and reading skills for Dutch and English, as well as arithmetic, performed by the examination board: these central examinations were gradually introduced and piloted but, since 2015, the results are no longer taken into account in the overall assessment.
- (b) To improve the examination in relation to professional requirements, so-called examination profiles were introduced. Based on cooperation between labour market stakeholders and VET schools, the examination profiles described who would take responsibility in the assessment of students. During a pilot-phase, these more uniform examination profiles were tested, but this never led to legal embedding, as the impact on increasing the quality of assessment was never proven.
- (c) One proposed measure referred to a more joint development of exams and purchase of exams from national exam banks by VET institutions. This actually resulted in VET institutions increasingly developing exams jointly <sup>(63)</sup>. To this end, they set up external foundations and partnerships (outside of the VET institutions), in which schools and teachers, together with employers, construct exams. The VET institutions then purchase the exams from these external organisations. VET schools were also able to purchase from private, commercial parties. Currently, as concluded by a forthcoming study (IVA Onderwijs, Kennispunt MBO Onderwijs & Examinering, 2022, p. 24), ‘there are more than 60 exam suppliers on the market that offer exam instruments

---

<sup>(62)</sup> Developments in assessment practices in Dutch VET in the past 15 years – particularly influenced by continuous changes in the national qualification structure describing the end goals of VET trajectories, and changes in the system of quality assurance of VET assessments – are discussed in Baartman and Gulikers (2017).

<sup>(63)</sup> Currently, VET schools have three routes to arrive at assessment tools for assessing in the real occupation context meeting validity requirements (Netherlands. Validering Examens MBO, 2018). They can purchase exams at a certified provider, use self-constructed exams based on collective agreements, or make use of external validation of self-constructed exams.

for qualifications, electives (*Keuzedelen*), VET certificates and institutional exams. Some of them have their roots in the old knowledge centres (*Kenniscentra*) and national vocational training bodies’.

- (d) For the examination of vocational subjects, it was suggested that VET institutions should only use exams that comply with a national quality mark. This mark would have included an external check of the exams beforehand and potentially also afterwards. In the end, the national quality mark was never established as the quality measures in place were considered as sufficient.

The Dutch case study also points out that working practices are not the same for all VET students, so there is tension between adapting the assessment to specific working practices and standardising the assessment. Each VET provider has to find its own balance between adaptation and standardisation, taking into account the qualification files (description of core tasks and work processes), the quality frameworks of the inspections and the local (labour market) context. However, although examinations may differ between examination providers, VET institutions, regions and workplaces, the controls in place ensure that they all measure and report on student performance in line with the descriptions of learning outcomes in the qualification files (Broek, 2022).

The evolution of assessment in VET in Poland is considered a process that took place in certain cycles and pursued the ambition to improve quality, particularly reliability, validity and authenticity. Box 20 briefly summarises these developments.

**Box 20. Evolution of assessment in VET in Poland**

At the beginning of the 1990s, VET schools designed the exams themselves and had great freedom and flexibility. The assessment was supposed to resemble real work situations, but since each exam was designed by the different schools themselves, reliability was considered low. In addition, a pass culture prevailed in many schools, which had a negative impact on the overall quality of the VET system. However, there were also schools for which the given freedom in organising the assessment allowed them to develop complex assessments with high validity and authenticity.

In 1999, the external examination system was introduced with the central and regional examination boards. In the first years, the focus was on improving the reliability of the examinations, but this was at the expense of validity. Often, the practical part of the examination was also conducted as a written task. For example, learners described how they would prepare a meal or perform a massage instead of doing it.

Since 2012, external examinations in VET have evolved towards performance assessment: The practical part now has the form of performance that resembles actual working conditions, which led to an increase in validity and authenticity; at the same time, a high level of reliability could be maintained. However, in the first years of the reform, VET was underfunded and many schools did not have the necessary



equipment. For this reason, it was not possible to carry out comprehensive performance assessment at the upper-secondary technical schools during this period.

Since 2019, reliability and validity have been strengthened again: the written part of the external examination (which usually lasts 60 minutes) is organised with the help of a computer, which makes it possible to create examination tasks in the form of videos, animations, etc., leading to the possibility of assessing more complex skills. The practical examination (which can last 120 to 240 minutes) includes both case study and performance for most upper secondary technical students. Thus, quite complex problem-solving skills can be assessed in this part of the examination as well <sup>(64)</sup>.

Source: Dębowski, 2022.

### 3.9. Impact of COVID-19 on assessment

The COVID-19 pandemic and the increased use of remote or online education showed gaps in access and connectivity between and within Member States (European Parliament, 2021). Unequal access to digital tools for students, teachers and families, particularly those from disadvantaged backgrounds and those based in rural and remote areas, have raised concerns about the viability of remote assessment as ‘it would not grant all learners the same opportunities’ (OBESSU, 2021, p. 48). In addition to this general trend, the impact of the COVID-19 pandemic varied considerably between occupational fields (services, social and healthcare) represented in VET, which has implications for assessment.

The disruption of the learning and assessment processes (due to the pandemic) has in some cases led to the use of flexible forms of learning and assessment. For example, alternative assessment procedures and tools (often digital forms) <sup>(65)</sup> were used during lockdown and distance learning phases or specific approaches were used when learners were back at VET providers. This is confirmed by a recent survey report (ILO and World Bank 2021) that also indicates that alternative approaches to practical skills training and assessment have been introduced in some cases, often through virtual platforms <sup>(66)</sup>. Similarly, the OECD

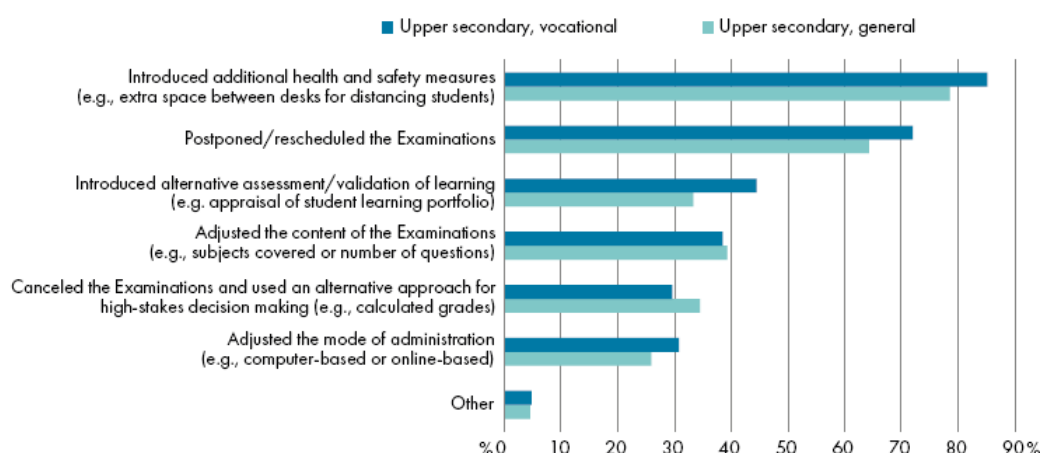
<sup>(64)</sup> To pass the written part, a learner must score at least 50%, and to pass the practical part, a learner must score at least 75%. This means that the threshold for passing is quite high. In 2021, of the approx. 370 000 learners who took the VET examination, approximately 76% passed both the written and the practical part of the examination (Dębowski, 2022).

<sup>(65)</sup> A respondent to the online survey launched by the European Commission suggested: 'Assessment must be developed in a creative way, with quizzes, questionnaires etc.'. [Fight against COVID-19: European vocational skills week \(europa.eu\)](#).

<sup>(66)</sup> There are also indications that, in some countries, exams were cancelled (and grades were given based on achievements during the school year or on continuous

study on the impact of the COVID-19 pandemic on VET indicates that ‘VET assessments or examinations in upper secondary education needed to be adjusted in many countries’ (OECD, 2021, p. 11). This is particularly true for VET systems that rely on skills demonstration to assess learners in VET. There is also evidence that 2019-20 national examinations in VET were adjusted due to the pandemic, as the following figure demonstrates:

Figure 22. **Changes to 2019-20 national examinations in upper-secondary education due to the pandemic (% of countries, VET versus general education)**



**Note:** This figure is based on the 30 countries for which data on upper secondary general education are available and on the 27 countries for which the same data are available for upper secondary vocational education.

**Source:** OECD/UIS/UNESCO/UNICEF/WB Special Survey on COVID. March 2021.

**Source:** OECD, 2021, p. 12.

The OECD report on the impact of the COVID-19 pandemic in VET also referred to adjustments made related to the stakeholders involved in assessment. ‘Some countries also made changes in the examination committees in VET. For example, in Norway only one examiner was required instead of two in the school years 2019/20 and 2020/21. Likewise, in Slovenia only two members instead of the usual three can carry sit on the oral exam committees for the vocational *matura*. Moreover, an examiner may exceptionally (due to quarantine) participate online in the examination’ (OECD, 2021, p. 13).

While for Poland it is reported that the COVID-19 pandemic had a mild effect on the organisation of VET exams and practically no effect on the requirements and content of VET exams (Dębowski, 2022), several other countries had to change their assessment approaches; some examples are presented below.

---

assessment) or postponed due to the COVID-19 pandemic (in particular in spring 2020), e.g. in [Norway](#), [Malta](#), [Denmark](#).

- (a) The Croatian agency for VET and adult education (ASOO) published recommendations on implementation of the final thesis for VET students, according to which, in the conditions of teaching implemented at distance, the final thesis can be defended at distance as well. The student is required to prepare a short presentation and to answer questions. S/he can demonstrate a certain skill, simulate a certain device, describe a technological procedure, etc. (Pavkov 2022, p. 21). The recommendations also describe different approaches for assessment of students' practical skills at distance: 'Student work can be evaluated according to given components using criteria of evaluation (rubrics), photo documentation, e-portfolio development, etc., always taking into account the availability of technology to the individual students and the unambiguousness of instructions' (Pavkov, 2022, p. 21).
- (b) In Czechia, the [COVID-19 pandemic prompted change in distance learning legislation](#): 'In August 2020, an amendment to the school act was adopted through an accelerated procedure under legislative emergency, adding a section regulating special conditions under which, due to defined extraordinary circumstances, the personal presence of students at schools is not possible. In such cases, schools are obliged to provide distance education and students must participate. Schools must follow their valid school curriculum to the extent appropriate to the situation. Distance learning and assessment of its results must be adapted to the students' circumstances. This means, for example, that those who do not have remote access via ICT will be allowed to pick up the material in person at school or obtain it via telephone. The government consequently approved the provision of extra funds for schools to secure distance learning software and hardware equipment for teachers and students'. It has been observed that 'the pandemic had an impact on the practical teaching and assessment in VET, thereby complicating the implication of the unified assignments reform' (Looney et al., 2022, p. 37).
- (c) In Estonia, the exam for care workers was conducted in digital mode in 2021 as students demonstrated their practical skills over live videos (Mägi and Preegel, 2022).
- (d) In 'Finland (Ministry of Education and Culture), students were reported to be carrying out practical tasks at home and uploading them on to platforms or sending videos and photos of completed work for evaluation by teachers' (ILO and World Bank 2021, p. 21). Skills demonstrations in Finland also had to be adapted and students were allowed to 'to demonstrate their professional skills and competence by performing other practical tasks that are as similar as possible to authentic work situations and processes' (OECD, 2021, p. 13). If

necessary: 'Assessment of skills is based on demonstration of competences in a real working environment; there is no final exam in Finnish VET. If it is not possible in this situation to arrange demonstrations of competence in the workplace for all students, the education provider gives priority to those scheduled to complete the qualification and graduate this spring. Demonstration of competence can also be organised in other workplace-like learning environments outside the education institution, such as the training provider's own construction sites or teaching farms. The evidence must always be arranged in such a way that the methods of demonstrating competence correspond as closely as possible to authentic work tasks and work processes, enabling the assessment of professional skills. If this is not possible, the demonstration and assessment of competence should be postponed' <sup>(67)</sup>.

- (e) In Slovenia, schools 'reorganised student assessment plans by adapting the methods, the number of assignments and the grades. Teachers also considered the acquired knowledge and skills from the period of regular classes, and limited the number of grades acquired by distance assessment. The assessment assignments were based on the material covered by distance education and could also include participation in distance education. Final exams and vocational *matura* were conducted according to the regular calendar, except for the postponed start of vocational *matura* exams on 30 May 2020. Final exams followed the regular school calendar, from 1 June onwards. The CPI prepared special instructions for final and vocational *matura* examination of students of VET programmes. In cooperation with schools, the chambers invested efforts in finding solutions for every apprentice to continue their training in companies. In some cases, due to a decrease in companies' business, apprentices continued their training in school workshops for the rest of the school year' <sup>(68)</sup>.
- (f) In UK-England, the guidelines on how to conduct end-point assessments (EPAs) of apprentices during the current COVID-19 situation suggest the use of flexible approaches <sup>(69)</sup>. For example, assessments can take place in suitable alternative venues, including an apprentice's home; where an assessment method needs face-to-face engagement, this can be done by using video conferencing (including for workplace observations). Simulated

---

<sup>(67)</sup> [Finland: COVID-19 and vocational education and training, Cedefop](#)

<sup>(68)</sup> [Slovenia: Response to the COVID-19 outbreak, Cedefop](#)

<sup>(69)</sup> [COVID-19 guidance: end-point assessment of apprenticeship standards, Institute for Apprenticeships and Technical Education](#)

environments for practical assessments can also be used, with further modifications if justified appropriately and agreed.

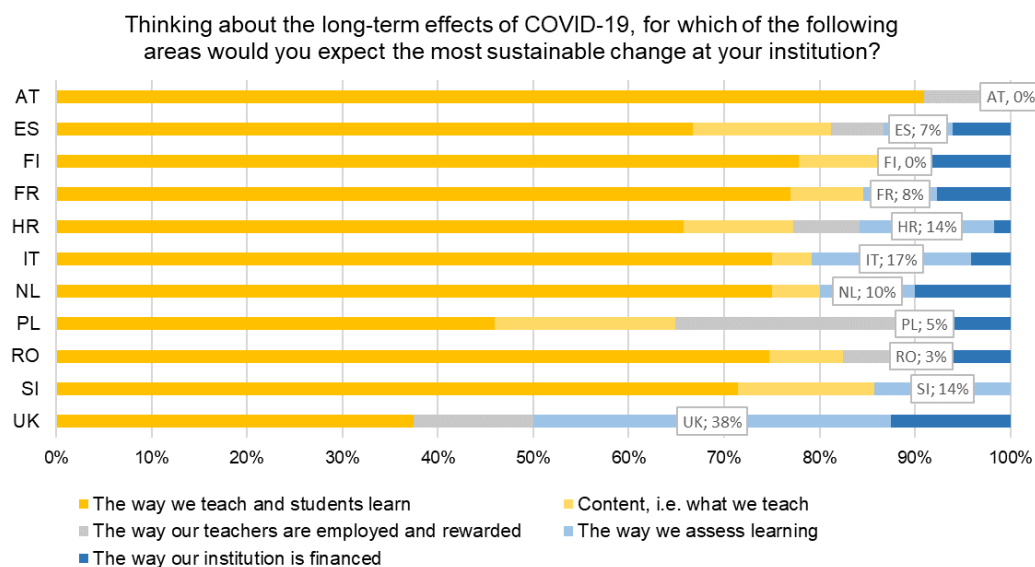
Some countries conducted surveys or evaluations on experiences with distance learning, including challenges and associated needs and, in many cases, the need for further training of teachers related to assessment in this specific context was indicated.

- (a) In Croatia, a [VET teacher survey conducted by the agency for VET and adult education](#) (ASOO) revealed that 88% of respondents requested further guidance on assessment in virtual environments. Based on this survey, recommendations from the Ministry of Science and Education and further consultations with stakeholders, ASOO provide support to VET providers through various measures, including 'the development and delivery of a professional development module on teaching and assessment methodology in virtual environments and blended learning for teachers in IVET and CVET'.
- (b) In Estonia, an analysis of distance learning experiences made the following observations: 43% of teachers assessed students differently based on their abilities weekly or daily while 25% did not make any individual changes to assessment; teachers who used diverse methods, put effort into use of web applications, providing feedback and encouraging discussion; they also collaborated more with other teachers (Loogma and Sirk, 2021).
- (c) In Slovenia, the [evaluation of the implementation of work-based learning \(WBL\)](#) in the school year 2019/20 including the period of distance education (prepared by the CPI) suggests that 'additional teacher training is required in the fields of monitoring student progress and assessment, exchange of good practices, use of ICT, and distance training'.

Though the pandemic has had an impact on different areas of VET, assessment is not likely to be the one most affected, nor were the changes necessarily sustainable. For instance, thinking about the long-term effects of the pandemic, participants in the VET provider survey were asked about the area in which the most sustainable change was expected. For the majority, (66%), the most relevant area was the way they teach and students learn, followed by changes in VET content (12%) and changes in assessment (8%). At country level, most countries (except for Austria and Finland) have a certain (usually smaller) share of respondents who expect that assessment would be the area with most sustainable changes in terms of long-term effects of the pandemic. It was to be expected that, when it comes to the long-term impact of COVID-19, 'the way we teach and students learn' is the first logical option. Despite this, however, there are respondents in almost all countries who see a greater impact on assessment than on teaching and learning. Results from the UK stand out here, as for more than

one third of respondents, assessment is the area where the most sustainable change is expected (Figure 23). Open text answers provide some insight into the views of those respondents who expected the most sustainable change in the area of assessment: most referred to changes arising from the transition to remote learning and its implications for assessment. Several respondents expressed concerns related to the objectivity and validity of assessment in a remote context (e.g. ‘Remote learning does not allow for objectivity in assessing a student’s educational progress’; ‘Virtual distance learning assesses virtual knowledge that is not the actual knowledge or ability of the student’). At the same time, several respondents also referred to new opportunities that have arisen as a result (e.g. ‘During COVID-19 students were mainly online. Teachers engaged in training to diversify their method of training and assessment. Teachers became more conscious of universal design for learning (UDL) and used this approach in their assessment so that all learners’ needs were met.’; ‘During the pandemic, new ways of assessing students were developed and now there is a need to vary assessment. I think teachers will use digital-based assessment after COVID and progressively results will appear’; ‘Personally, I [now] make greater use of digital instruments in the assessment process’).

Figure 23. **Areas with the most sustainable change expected due to COVID-19**



Source: VET provider survey. Data from selected countries. n=573. Question only addressed to respondents who indicated that the COVID-19 pandemic had affected the longer-term development of VET at their institution.

The expectations in Croatia may relate to the introduction of an e-grading application <sup>(70)</sup> for State *matura* exams which will be used for all subjects from 2022/23 (Pavkov, 2022). In the Dutch case, expectations may be linked to the bigger freedom given to VET schools to conduct exams in a different and tailored manner, such as through using formative assessments and other evidence instead of final exams. The 2021 Assessment framework for the inspectorate's supervision of the VET sector (Netherlands, Inspectie van het Onderwijs, 2021) clarifies this opportunity (Broek, 2022). It indicates that VET schools have the liberty to use other evidence besides exams as long as the Examination Board can guarantee the quality of the additional evidence (Kennispunt MBO onderwijs & examineren, 2021). In Estonia (which is not a focus country of the survey), it is expected that the flexibility of carrying out assessment as it was done during distance learning, with the shift to the digital mode, is likely to stay (Mägi and Preegel, 2022).

Only 5% of Polish respondents consider assessment to be the one area with the most sustainable change. This may be partly explained by concerns raised about the objectiveness and reliability of remote assessment, particularly that assessment in distance learning is more difficult and less objective <sup>(71)</sup>.

Although changes in assessment have also taken place in Austria and Finland, these have not been perceived as the most sustainable type of change by VET institutions participating in the VET provider survey. In Austria, the standardised central final examination was postponed to a later date in 2020 and 2021 and although the pandemic has, in some parts, led to faster digitalisation 'this did not necessarily imply a change in the content of the assessment or in the requirements, but rather simply in the form of delivery and storage' (Fellinger, 2022, p. 21). In Finland, the pandemic brought difficulties in finding places for training agreements, workplace guides and in finding time for organising and conducting assessment through skills demonstrations. Although new practical and time-saving arrangements have been found (e.g. the organisation of some skills demonstrations through mobile devices and digital technology), these will not replace all face-to-face interaction (Virolainen, 2022, p. 27). In Lithuania, the pandemic did not have 'any profound impact on the VET assessment approaches, procedures and instruments, with the exception of some temporary rescheduling of the timing' (Tutlys, 2022, p. 18).

---

<sup>(70)</sup> The application was developed in 2020 as a test version. It enables the assessment of the State *matura* exam on computers or tablets in accordance with all standards and safety measures implemented during the current grading method (paper and pen) (Pavkov, 2022).

<sup>(71)</sup> Based on open-text answers provided to the question from Figure 23.

It can be concluded that the COVID-19 pandemic has led to disruption of the learning and assessment processes, which resulted in the use of more flexible forms of learning and assessment. In the assessment context, more flexible forms include, for example, the increased use of digital tools, the replacement of final exams with formative assessment, the introduction of new forms of evidence for acquired knowledge, skills and competences. However, there is limited evidence that the assessment changes implemented will be sustained.



## CHAPTER 4.

# Conclusions

The aim of this research was to explore the evolution of assessment in IVET during the past 25 years. The analytical framework developed for this purpose is based on the three-perspective model that looks at VET from an epistemological and pedagogical-didactical perspective, an education system perspective and a socioeconomic and labour market perspective (Cedefop, 2022, forthcoming-d). In this chapter, conclusions and emerging issues are presented based on the research conducted. Overall, it can be pointed out that the research shows that assessment is continuously being reformed in the countries covered by this study, indicating its essential importance for improving the quality and value of VET in general.

In this chapter, we will address the research questions that underpin this study and present the findings obtained, and we will also point to challenges and limitations identified as well as to further research needs.

### 4.1. Reflections on the research questions

The following reflections on the research questions address the key features analysed based on the analytical framework; this is not in the order in which they are included in the framework, as the research questions focus on selected aspects.

#### 4.1.1. Development of assessment forms over time

The first research question referred to the dominant assessment forms applied in IVET and how these have evolved over time. To answer this question, the following dimensions included in the analytical framework are particularly relevant: function and purpose (including basis for awarding a qualification), learning contexts, methods and tools. The results of the observed developments are presented below.

Previous research pointed to a stronger focus on formative assessment (Psifidou, 2014), a trend that is expected to continue (European Commission, 2020a). The results from this study partly confirm this trend and also refer to continued focus on summative assessment that is combined – varying across countries – with formative assessment. The strengthened focus on formative assessment can be observed as policy intention linked to a learner-centred approach.

Similarly, research points to an increase in VET learners' self-assessment, which is probably more connected to formative than summative assessment. The strong focus on summative assessment might be linked, at least in some countries, to the fact that assessment results are used to monitor the performance of VET institutions as part of quality assurance in VET. While we can observe an expansion of the roles and functions of assessment that can be used together and do not necessarily contradict each other, the simultaneous attempt to achieve different goals with assessment can also lead to tensions. However, it is also not always clear to what extent the emphasis on formative assessment approaches and learner-centred pedagogy in general are not just political intentions or lip service, and to what extent they have actually gained ground in practice.

Summative assessment does not necessarily refer to an overall end-point assessment; it can also refer to the assessment of separate units or modules. Increased modularisation can be clearly observed during recent years and there is also evidence that several countries have introduced more flexible approaches, allowing learners to accumulate smaller parts of qualifications that are assessed separately. Some countries, however, seem to put a stronger focus on end-point assessments that cover the whole qualification. The use of smaller parts of qualifications, particularly the implementation of learning outcomes-based approaches, often goes hand in hand with expansion of opportunities to take into account learning outcomes acquired outside the formal VET system. A general increase in opportunities for validating and recognising non-formal and informal learning (e.g. work experience) can be observed in many countries, including those with a strong school-based tradition in VET. Thus, the increased tendency to organise assessment in a progressive and more flexible way (observed already by Psifidou, 2014) can also be confirmed by the current study, albeit to varying degrees in the individual countries.

A similar mixed picture emerges in the use of more standardised assessment approaches or more individual and flexible forms of assessment during recent years: in some countries, clear trends in one direction or the other can be observed, while in others both trends are present at the same time. Written examinations remain common in all countries, but there is evidence that countries have increasingly adopted different ways and methods of collecting evidence of practical knowledge. For example, many countries have introduced final practical exams or assignments, projects and performance demonstrations. Skills demonstrations are also increasingly carried out in real work environments and employers or other labour market stakeholders are increasingly involved in the assessment of VET learners. At the same time, the trend towards the use of digital assessment or various kinds of computer assisted tests, as already observed by

Psifidou (2014) and also expected for the future (European Commission, 2020a), can be confirmed. The related question in the VET provider survey proved to be the one on which respondents were most in agreement. This trend intensified during the COVID-19 pandemic, the period when the VET provider survey was conducted. However, because the use of digital technologies in assessment does not yet have a long history, there are still some challenges and caveats associated with it. At the same time, new approaches are also being developed and piloted.

The COVID-19 pandemic has impacted assessment in various ways, including postponing exams, reducing exam content, using alternative approaches to demonstrate skills (e.g. virtual forms), or adapting the usual assessment approach in other ways. In a few cases, the VET provider survey indicated assessment as 'the most sustainable change as a long-term result of COVID'. The answer option 'the way we teach and students learn' was chosen most often. However, there are also some respondents who chose assessment for this question. To what extent these changes will persist in the long term remains to be seen.

The way assessment has evolved over the years is closely linked to changes in the way qualifications and curricula are described and structured. The shift towards learning outcomes and the greater focus on flexible and individualised learning pathways has led to the introduction of new approaches to assessment. The strongly promoted closer links with the labour market and the involvement of employers in all aspects of VET can also be seen as a driving factor for the introduction of corresponding assessment methods.

An important driver of changing or further developing the assessment approach is linked to the key technical characteristics of quality assessment, particularly to validity and reliability. Impartiality and fairness, including transparency, are also emphasised, but the first two technical characteristics seem to be more strongly linked to the credibility of VET certificates and diplomas; this is essential for their value and currency in the labour market, for gaining access to further education, or in society in general. Therefore, these aspects seem to be given greater consideration in the relevant reforms.

Reliability and validity cannot easily be achieved simultaneously to the same degree: sometimes a compromise is required or a combination of different forms of assessment is used to satisfy both principles. For example, standardised external written examinations with a high degree of reliability are often introduced to meet the requirements of accountability and to strengthen the value and image of VET. Since practical knowledge (knowing how, skills) is closely related to VET, and the ability to apply knowledge in concrete situations and to use this knowledge to perform concrete actions can only be assessed to a limited extent in these tests,

other forms of assessment are introduced to ensure the validity of the assessment. This includes, for example, the introduction of the skills demonstrations at the workplace or other assignments close to the workplace. Since the context at real workplaces is subject to constant change through various influences that cannot always be controlled, the assessment approaches can only be standardised to a limited extent. In many countries, phases can be observed in which, in terms of assessment and the associated change processes over the years, sometimes one principle is pursued more strongly, sometimes another.

These developments often do not occur in a clear step-by-step approach or in a linear process. In some cases, it is a matter of striving for an improved approach that is repeatedly modified and there might be opposing trends at the same time. This can be illustrated by the example of the Netherlands where, in the past 25 years of development, opposing trends can be observed with respect to different dimensions of assessment and where the VET system is trying to find the right balance.

Table 11. **Opposing tendencies in the assessment practice in the Netherlands**

Flexibility and tailored approaches	Standardisation
Autonomy of VET schools (and examination boards) in examination	Outsourcing responsibility for examination
Expertise in-house	Expertise in external institutions
Use of more formative assessment and alternative evidence of performance	Emphasis on final examination

Source: Broek (2022).

#### **4.1.2. Alignment between assessment specifications and qualifications and programme standards**

The study asked to what extent assessment specifications and standards are used to support summative assessments. There is evidence that assessment specifications, particularly those that specify the criteria underpinning assessments, are increasingly being used. This approach has been strengthened by the shift to learning outcomes for describing qualifications and curricula.

Another question addressed referred to the extent assessment specifications are aligned with qualifications and programme standards. This alignment is closely linked to the principle of validity of assessment, which ensures that assessment approaches measure as precisely as possible the intended learning outcomes and that the evidence collected fully supports the assessment.

The VET provider survey shows that assessment is not always considered as one of the most important components for which implications arise due to changes in the area of content and delivery of VET: only in five countries were changes in

assessment among the key implications of changes observed in the delivery and content of VET identified. Nevertheless, the survey results suggest that changes in assessment are an important aspect of change in VET systems, even if they are not always seen as the most important. The results of the VET provider survey also indicate – at least partly – coherence between the intended learning outcomes, delivery and assessment. The country examples analysed also show that countries often make considerable efforts to achieve this alignment, e.g. by mapping assessment content to learning outcomes and assessment criteria. They also discuss the appropriate level of detail in the description of learning outcomes and assessment criteria and sometimes change their approach in one direction or another. Another aspect discussed and addressed in change processes is the room for interpretation and the scope for adapting learning outcomes and assessment criteria to specific target groups, such as students with special needs. These aspects are also closely linked to the aim of quality assessment and finding a balance between validity and reliability, standardisation and individualisation of assessment.

#### **4.1.3. Influence of the broadening of the skills and competence base of IVET on assessment**

The fourth research question relates to the extent to which broadening the skills and competence base of IVET might influence assessments with a view to greater emphasis on general subjects as well as increased focus on transversal skills and competences identified by Cedefop (2022b).

In the assessment of general subjects, the changes made indicate a tendency towards externalisation and standardisation of these examinations. This approach is also often associated with the fact that these exams are required for admission to higher education.

Psifidou (2014) referred to a tendency to broaden learners' assessment and to also include key competences in the assessment. The research conducted in this study also indicates an increase in the assessment of learners' transversal skills. However, this increase appears to be more related to formative assessment, which is conducted internally at the VET provider level, and less to summative assessment or externally conducted assessment. This might be due to the many challenges that are associated with the assessment of transversal competences.

The developments expected for the future in terms of capturing a broader range of skills and competences in assessment (European Commission, 2020a) can be confirmed by the results of this study, at least with regard to the inclusion of transversal competences, as most VET provider survey respondents indicate that they expect an increase in this respect.

## 4.2. Concluding reflections

In this final section, we offer some reflections on challenges that were identified during the research and analysis, and the limitations of the analytical framework developed, as well as on possible further research related to assessment in VET.

### 4.2.1. Challenges and limitations

A challenge of this research assignment was to distinguish between the rhetoric and opinions on assessment and what really happens on the ground (as it is difficult to say to what extent and how what is written in strategies and policy documents is actually implemented in practice), and also between short-term trends (e.g. based on reactions to the COVID-19 pandemic) and long-term developments. There are also limitations in the evaluation of the results of the VET provider survey, although here the respondents represent practice. However, it may be that the questions were interpreted differently: in some cases it is not clear whether the answers – and also the questions – refer to formative or summative assessment or to both. Changes over the past 25 years in a specific feature of VET such as assessment are often difficult to capture. It is easier in the context of summative final examinations (such as the introduction of assessments at the workplace or standardised national/external assessment procedures); these are more regulated and usually enshrined in law, leading to clearly identifiable changes in assessment practice (often accompanied by pilot and testing phases, the development of guidelines or manuals, and specific training for assessors). Changes related to formative assessment, in contrast, are more difficult to capture.

Another challenge in analysing the results of the empirical study relates to the analytical framework introduced and elaborated in Chapter 2. The analytical framework applies a degree of artificial separation and differentiation of dimensions relevant to the design of assessment in IVET. This is useful for analysing the processes of change in this area, but only to a certain extent. Specifically, the identified variants or features of each dimension refer to opposite trends only in some cases. This is more the case for the dimension 'learning context', for example, since 'assessment explicitly includes learning outcomes from the formal learning context only' clearly contrasts with 'assessment explicitly includes learning outcomes from formal, non-formal, and informal learning contexts' (except when the assessment consists of several parts and different characteristics apply in each case). Thus, they can be understood as dichotomous characteristics. However, for the dimension 'sources/methods for collecting evidence related to theoretical knowledge', the characteristics 'written test' and 'oral test' are distinguished, which are not necessarily mutually exclusive. It might be sensible in this case to revise the latter features and include a third one: 'written

test only', 'oral test only', 'combination of written and oral test'. This was also done for the dimension 'internal/external'. In the dimension 'sources/methods for collecting evidence related to practical knowledge', there are already three variants (direct, indirect, supplementary evidence) and adding combinations of these forms would probably overload the framework. However, as far as possible, the variants assigned to a dimension should be understood as being on a continuum.

Further, some of the dimensions and features are closely interrelated and, in some cases, the full picture only becomes apparent when looking at the combination of specific dimensions and variants: for example, an externally organised standardised written test indicates a different assessment approach from an internally organised written test with a low degree of standardisation. While the analytical framework can be used as a tool to create or identify specific patterns, caution is needed in interpreting the pattern and characteristics.

#### **4.2.2. Further research on assessment in VET**

The experience from the previous research project on the *Changing nature and role of VET* and the previous work from the current *Future of VET* study show that the analytical framework is not static but can be further developed. The dimensions and features can be further refined based on the limitations and on further theoretical and empirical findings, and the model can be adapted according to its intended use (i.e. elaborated in more detail in one area, as in the case of assessment). Further research could be devoted to elaboration of this model.

The research approach used in this study enabled the identification of general trends in assessment in IVET related to the dimensions and features included in the analytical framework. However, by design, it remained at a high level of abstraction (necessary to trace the development over the past 25 years, taking into account 30 countries) and was therefore not suitable for gaining deeper insights into what was or is actually happening on the ground (i.e. related to 'implemented' and 'experienced' assessment). For a closer look at assessment practice (e.g. to explore in more detail how assessment is carried out in the form of competence demonstrations in the workplace, how formative assessment is used to support learner progress) or to understand better the impact of assessment on the teaching and learning approach, other research methods would be required. For example, observations or video analysis of assessments and interviews, focus groups and reflections with examiners and assessed learners could help to gain further insights (such as why those involved acted in the way they did) and distinguish between intention, rhetoric and reality <sup>(72)</sup>. This approach could also help to explore aspects

---

<sup>(72)</sup> For example, 'work discussion' techniques could be used (e.g. Messerer, 2004; Rustin, 2008) or an reflection-on-action approach (e.g. Seel, 2002).

that have been less considered in the empirical part of this study, such as features of evaluation that unintentionally promote inequality (including 'covert validation' as discussed by Souto-Otero, 2021).

The research carried out has revealed several trends in assessment, some of which are common across countries (and seem to be more generally accepted and implemented). Other trends point to opposing directions or parallel trends that at first sight appear to be pursuing opposing goals, but rather aim to fulfil different principles and quality requirements at the same time (e.g. to achieve a balance between validity and reliability of assessment). This phenomenon can perhaps also be attributed to the fact that, from the perspective of different levels, different aspects or principles are in the foreground. At the level of education administration, standardisation, comparability, accountability and related quality requirements (especially with regard to reliability) as well as scalability and cost-efficiency are of high importance; at the level of education practice, individualisation and the use of more flexible formats of assessment are more prominent. This can lead to potential conflicts and tensions in the field of assessment, as it is also a political issue with a power dimension. These aspects could be further explored, both at the VET system level and at the level of individual providers.

Another question to be addressed in follow-up studies is that of the rationale behind decisions regarding assessment design and related reforms. The decision for an assessment approach is based on values and norms; these underlying aspects would need to be explored in more detail. Why have countries chosen certain paths and what are the interests behind their choices (e.g. for retaining and strengthening or rejecting and discarding certain assessment approaches), or to what extent are reforms related to different (and changing) policy preferences?



# Acronyms

ASCOT	technology-based assessment of skills and competences in VET (DE)
ASOO	Agency for VET and Adult Education ( <i>Agencija za strukovno obrazovanje i obrazovanje odraslih</i> , HR)
Bbl	work-based pathway ( <i>beroeps begeleidende leerweg</i> , NL)
Bol	school-based pathway ( <i>beroeps opleidende leerweg</i> , NL)
CAP	professional skills certificate ( <i>Certificat d'aptitude professionnelle</i> , FR)
CPD	continuous professional development
CPI	Institute of the Republic of Slovenia for Vocational Education and Training ( <i>Center RS za poklicno izobraževanje</i> )
CVET	continuous vocational education and training
EBTC	experience-based trade certification (NO)
EPA	end-point assessment
ESCO	European skills, competences, qualifications and occupations
ET	education and training
EU	European Union
EQF	European qualifications framework
FINEEC	Finnish Education Evaluation Centre
IVET	initial vocational education and training
IT	information technology
KSC	knowledge, skills, competences
LPD	learning personal documentation
NQF	National qualifications framework
NSK	National register of qualifications ( <i>národní soustava kvalifikací</i> , CZ)
OJTC	on-the-job trade certificate (NO)
QMS	quality management system
RNCP	National directory of professional certifications ( <i>Répertoire national des certifications professionnelles</i> , FR)
STEM	science, technology, engineering, and mathematics
TKC	transversal key competences
TSC	transversal skills and competences
VAE	validation of acquired experience ( <i>validation des acquis de l'expérience</i> , FR)
VET	vocational education and training
VNFIL	validation of non-formal and informal learning
WEB	Act on VET and adult education ( <i>Wet educatie en beroepsonderwijs</i> , NL)

### Country abbreviations

AT	Austria
ES	Spain
FI	Finland
FR	France
HR	Croatia
IT	Italy
NL	Netherlands
PL	Poland
RO	Romania
SI	Slovenia
UK	United Kingdom

# References

[URLs accessed 4.11.2022]

- Aarkrog, V. and Wahlgren, B. (2015). Assessment of prior learning in adult vocational education and training. *International Journal for Research in Vocational Education and Training*, Vol. 2, No 1, pp. 39-58.  
<http://dx.doi.org/10.13152/IJRVET.2.1.3>
- Aarkrog, V. and Wahlgren, B. (2017). Developing schemas for assessing social competences among unskilled young people. *International journal for research in vocational education and training*, Vol. 4, No 1, pp. 47-68.  
<http://dx.doi.org/10.13152/IJRVET.4.1.3>
- Australia. Skills Quality Authority (2016). *Guide to developing assessment tools*.  
[https://www.asqa.gov.au/sites/default/files/Guide\\_to\\_developing\\_assessment\\_tools.pdf?v=1508135481](https://www.asqa.gov.au/sites/default/files/Guide_to_developing_assessment_tools.pdf?v=1508135481)
- Austria. QMS (2022). *Der Qualitätsrahmen für Schulen* [Quality framework for schools]. <https://www.qms.at/qualitaetsrahmen/der-qualitaetsrahmen-fuer-schulen>
- Auzinger, M. et al. (2017). *The role of learning outcomes in supporting dialogue between the labour market and education and training: the case of vocational education and training*. [Unpublished study commissioned by Cedefop].
- Baartman, L. and Gulikers, J. (2017). Assessment in Dutch vocational education: Overview and tensions of the past 15 years. In: Bruijn, E.D. et al. (eds). *Enhancing Teaching and Learning in the Dutch Vocational Education System*. Dordrecht: Springer, pp. 245-266.
- Beier, A. (2019). Ein Kompetenzraster für die Beurteilung der abschließenden Arbeit im Rahmen der Reife- und Diplomprüfung. Diplomarbeit. Linz: Johannes-Kepler-Universität.  
<https://epub.jku.at/obvulihs/download/pdf/3512131>
- Benavot, A. and Tanner, E. (2007). *The growth of national learning assessments in the world, 1995-2006: Background paper prepared for the Education for All Global Monitoring Report 2008*. Education for All by 2015: will we make it?  
<https://unesdoc.unesco.org/ark:/48223/pf0000155507>
- Biggs, J. (2003). *Teaching for quality learning at university: what the student does*. Buckingham: SRHE and Open University Press.
- Black, P. and Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: principles, policy and practice*, Vol. 5, No 1, pp. 7-74.
- Bolli, T. et al. (2018). Beyond employer engagement: measuring education-employment linkage in vocational education and training programmes. *Journal of Vocational Education and Training*, Vol. 18, No 4, pp. 524-564.  
<https://doi.org/10.1080/13636820.2018.1451911>

- Boud, D. and Soler, R. (2016). Sustainable assessment revisited. *Assessment and Evaluation in Higher Education*, Vol. 41, No 3, pp. 400-413.
- Bratsberg, B., et al. (2020). Economic returns to adult vocational qualifications. *Journal of Education and Work*, Vol. 33, No 2, pp. 99-114.  
<http://dx.doi.org/10.1080/13639080.2020.1722988>
- Broek, S. (2022). Case study Netherlands: the future of vocational education and training in Europe: volume 3: facilitating vocational learning: the influence of assessments. Thessaloniki: Cedefop.
- Callan, V.J. and Johnston, M.A. (2020). Influences upon social media adoption and changes to training delivery in vocational education institutions. *Journal of Vocational Education and Training*, pp. 1-26.  
<https://doi.org/10.1080/13636820.2020.1821754>
- Carter, A. and Bathmaker, A.B. (2017). Prioritising progression over proficiency: limitations of teacher-based assessment within technician-level vocational education. *Journal of Further and Higher Education*, Vol. 41, No 4, pp. 460-474. <https://doi.org/10.1080/0309877X.2015.1135881>
- Cedefop (2009a). *The dynamics of qualifications: defining and renewing occupational and educational standards*. Luxembourg: Publications Office.  
[https://www.cedefop.europa.eu/files/5195\\_en.pdf](https://www.cedefop.europa.eu/files/5195_en.pdf)
- Cedefop (2009b). *The relationship between quality assurance and VET certification in EU Member States*. Luxembourg Publications Office.  
[http://www.cedefop.europa.eu/EN/Files/5196\\_en.pdf](http://www.cedefop.europa.eu/EN/Files/5196_en.pdf)
- Cedefop (2014). *Terminology of European education and training policy: second edition: a selection of 130 key terms*. Luxembourg: Publications Office.  
[https://www.cedefop.europa.eu/files/4117\\_en.pdf](https://www.cedefop.europa.eu/files/4117_en.pdf)
- Cedefop (2015a). *Ensuring the quality of certification in vocational education and training*. Luxembourg: Publications Office. Cedefop research paper, No. 51.  
<http://dx.doi.org/10.2801/25991>
- Cedefop (2015b). *Vocational pedagogies and benefits for learners: practices and challenges in Europe*. Luxembourg: Publications Office. Cedefop research paper, No. 47. <http://dx.doi.org/10.2801/294434>
- Cedefop (2017). *Defining, writing and applying learning outcomes: a European handbook*. Luxembourg: Publications Office.  
<http://dx.doi.org/10.2801/566770>
- Cedefop (2019). *Vocational education and training in Romania: short description*. Luxembourg: Publications Office. <http://data.europa.eu/doi/10.2801/256780>
- Cedefop (2020a). Cedefop study on 'the future of vocational education and training in Europe' – deliverable 3b – guidelines, Annex 1 questionnaire and Annex 2 glossary. Circular 2020.07 [from Cedefop to ReferNet partners] RB(2020)00519.
- Cedefop (2020b). *European qualifications framework. Initial vocational education and training: focus on qualifications at levels 3 and 4*. Luxembourg:

- Publications Office. Cedefop research paper, No 77.  
<http://data.europa.eu/doi/10.2801/114528>
- Cedefop (2020c). *Key competences in initial vocational education and training: digital, multilingual and literacy*. Luxembourg: Publications Office.  
<http://data.europa.eu/doi/10.2801/671030>
- Cedefop (2020d). *Vocational education and training in Croatia: short description*. Luxembourg: Publications Office. <http://data.europa.eu/doi/10.2801/121008>
- Cedefop (2020e). *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.  
<http://data.europa.eu/doi/10.2801/794471>
- Cedefop (2021a). *European inventory on NQF 2020: Czechia*.  
<https://www.cedefop.europa.eu/en/country-reports/czechia-european-inventory-nqf-2020>
- Cedefop (2021b). *European inventory on NQF 2020: Germany*.  
<https://www.cedefop.europa.eu/en/country-reports/germany-european-inventory-nqf-2020>
- Cedefop (2022, forthcoming-a). *The future of VET: delivering IVET: institutional diversification and expansion*. [working title]. Luxembourg: Publication Office. Cedefop research paper.
- Cedefop (2022, forthcoming-b). *The future of VET: delivering IVET: results from a VET provider survey* [working title]. Luxembourg: Publication Office. Cedefop research paper.
- Cedefop (2022, forthcoming-c). *The future of VET: facilitating vocational learning: delivering lifelong learning: the changing relationship between IVET and CVET* [working title]. Luxembourg: Publication Office. Cedefop research paper.
- Cedefop (2022, forthcoming-d). *The future of VET: the three-perspective model for comparative research on VET* [working title]. Luxembourg: Publication Office. Cedefop research paper.
- Cedefop (2022a). *Comparing vocational education and training qualifications: towards methodologies for analysing and comparing learning outcomes*. Luxembourg: Publications Office. Cedefop reference series, No 121.  
<http://data.europa.eu/doi/10.2801/939766>
- Cedefop (2022b). *The future of vocational education and training in Europe: volume 1: the changing content and profile of VET: epistemological challenges and opportunities*. Luxembourg: Publications Office. Cedefop research paper, No 83. <http://data.europa.eu/doi/10.2801/215705>
- Cedefop ReferNet Estonia (2018). *VET in Europe reports 2018: vocational education and training in Estonia*.  
[http://libserver.cedefop.europa.eu/vetelib/2019/Vocational\\_Education\\_Training\\_Europe\\_Estonia\\_2018\\_Cedefop\\_ReferNet.pdf](http://libserver.cedefop.europa.eu/vetelib/2019/Vocational_Education_Training_Europe_Estonia_2018_Cedefop_ReferNet.pdf)

- Cedefop, et al. (2019). *European inventory on validation of non-formal and informal learning 2018 update: synthesis report*.  
[http://libserver.cedefop.europa.eu/vetelib/2019/european\\_inventory\\_validation\\_2018\\_synthesis.pdf](http://libserver.cedefop.europa.eu/vetelib/2019/european_inventory_validation_2018_synthesis.pdf)
- Cefai, C. et al. (2021). *A formative, inclusive, whole school approach to the assessment of social and emotional education in the EU*. NESET report. Luxembourg: Publications Office. <https://data.europa.eu/doi/10.2766/506737>
- Chin, D.B., et al. (2016). Got game? A choice-based learning assessment of data literacy and visualization skills. *Technology, Knowledge and Learning*, Vol. 21, No 2, pp. 195-210.
- Coates, H. (2018). Assessing learning outcomes in vocational education. In: S. McGrath, S. et al. (eds). *Handbook of vocational education and training: developments in the changing world of work*, pp. 1-17.  
[http://dx.doi.org/10.1007/978-3-319-49789-1\\_81-1](http://dx.doi.org/10.1007/978-3-319-49789-1_81-1)
- Colardyn, D. and Bjornavold, J. (2004). Validation of formal, non-formal and informal learning: policy and practices in EU Member States. *European Journal of Education*, Vol. 39, No 1, pp. 69-89.
- Council of the European Union (2012). Council recommendation of 20 December 2012 on the validation of non-formal and informal learning. *Official Journal of the European Union*, C 398, 22.12.2012, pp. 1-5. <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:398:0001:0005:EN:PDF>
- Council of the European Union (2020). Council recommendation of 24 November 2020 on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience. *Official Journal of the European Union*, C 417, 2.12.2020, pp. 1-16. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020H1202%2801%29>
- Croatia. Agency for Vocational Education and Training and Adult Education (2020). Preporuke za provođenje obrane završnog rada i učenja temeljnog na radu u sustavu strukovnog obrazovanj i osposobljavanja [Recommendations for the implementation of the final thesis assignment based on the practical work in the system of vocational education and training].  
<https://www.asoo.hr/wp-content/uploads/2020/06/Preporuke-za-provo%C4%91enje-obrane-zavr%C5%A1nog-rada-i-u%C4%8Denja-temeljnog-na-radu-u-sustavu-strukovnog-obrazovanja-i-osposobljavanja.pdf>
- Croatia. National Centre for External Evaluation of Education (2018). *Analiza povezanosti ispita državne mature i nastave u srednjim školama: prikaz rezultata dobivenih primjenom upitnika u srednjim školama*. [Analysis of the connection between the State Matura exam and teaching in secondary schools – Review of the results obtained through a questionnaire in secondary schools]. <https://www.bib.irb.hr/1115716>

- Croatia. Ministry of Science and Education (2020). *Smjernice za vrednovanje procesa učenja i ostvarenosti ishoda u osnovnoškolskome i srednjoškolskome odgoju i obrazovanju* [Guidelines for the assessment of learning processes and outcomes' achievement in primary and secondary education].
- Crossouard, B. (2011). Using formative assessment to support complex learning in conditions of social adversity. *Assessment in Education*, Vol. 18, No 1, pp. 59-72.
- Czechia. Parliament (2020). Zákon č. 284/2020 Sb., kterým se mění zákon č. 561/2004 Sb., o předškolním, základním, středním, vyšším odborném a jiném vzdělávání (školský zákon), zákon č. 178/2016 Sb. a zákon č. 200/1990 Sb. [Act No. 284/2020 Coll., amending the Act No. 561/2004 Coll. on pre-school, primary, secondary, higher vocational and other education (School Act), the Act No. 178/2016 Coll. and the Act No. 200/1990 Coll.]. Prague, 10.6.2020. <https://www.psp.cz/sqw/sbirka.sqw?cz=284&r=2020>
- Dann, R. (2002). *Promoting assessment as learning*. London and New York: Routledge/Falmer.
- Dębowski, H. (2022). *Case study Poland: the future of vocational education and training in Europe: volume 3*. Facilitating vocational learning: the influence of assessments. Thessaloniki: Cedefop.
- Dębowski, H. and Stęchły, W. (2020). *Presentation for the TRACK-VET project virtual conference 'Developing, assessing and validating transversal key competences in the formal initial and continuing vocational education and training'*, Part 2, 24.11.2020. <https://track-vet.eu/publications>
- Dębowski, H. et al. (2021). *Development and assessment of transversal key competences in the VET sector: model solutions and practices in six European countries*. Warsaw: SGH Warsaw School of Economics. [https://ec.europa.eu/programmes/erasmus-plus/project-result-content/023e5f44-04b7-447d-afbc-bd1cfb3d23ba/IO\\_8\\_TRACK-VET\\_synthesis\\_report\\_20210201.pdf](https://ec.europa.eu/programmes/erasmus-plus/project-result-content/023e5f44-04b7-447d-afbc-bd1cfb3d23ba/IO_8_TRACK-VET_synthesis_report_20210201.pdf)
- Deutscher, V. and Winther, E. (2018). A conceptual framework for authentic competence assessment in VET: a logic design model. In: McGrath, S. et al. (eds). *Handbook of vocational education and training: developments in the changing world of work*, pp. 1-14. [http://dx.doi.org/10.1007/978-3-319-49789-1\\_80-1](http://dx.doi.org/10.1007/978-3-319-49789-1_80-1)
- Earl, L.M. and Katz, S. (2006). *Rethinking classroom assessment with purpose in mind: assessment for learning, assessment as learning, assessment of learning*. Manitoba Education, Citizenship & Youth, Winnipeg, 2006
- Ecclestone, K., et al. (2010). *Transforming formative assessment in lifelong learning*. Maidenhead: Open University Press.
- Edge Foundation (2021). *Philosophy of vocational education debate: qualifications and assessment*. <https://www.edge.co.uk/news-and-events/news/philosophy-of-vocational-education-debate-qualifications-and-assessment/>



- EQF Advisory Group (2019). *Note JAG 2-4: Meetings of the EQF Advisory Group and ESCO Member States Working Group, 5-6-7 February 2019: the need for an agreed terminology on transversal skills and competences.*
- European Commission (2012). *Thematic working group 'Assessment of Key Competences': literature review, glossary and examples.* Brussels: European Commission. <https://resources.ats2020.eu/resource-details/LITR/key-competences>
- European Commission (2018). *Council recommendation of 22 May 2018 on key competences in lifelong learning.* COM(2018) 24 final. [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604\(01\)&rid=7](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&rid=7)
- European Commission (2020a). *Prospective report on the future of assessment in primary and secondary education.* Luxembourg: Publications Office. <https://data.europa.eu/doi/10.2766/3774>
- European Commission (2020b). *Innovation and digitalisation: a report of the ET 2020 Working Group on Vocational Education and Training (VET): eight insights for pioneering new approaches.* <https://data.europa.eu/doi/10.2767/25307>
- European Commission (2020c). *Study supporting the evaluation of the Council Recommendation of 20 December 2012 on the validation of non-formal and informal learning: final report.* Luxembourg: Publications Office. <https://data.europa.eu/doi/10.2767/55823>
- European Commission and Cedefop (2021). *Developing high quality validation methodologies. Note EQF AG 55-5, 55th EQF Advisory Group Meeting, 23-24 February 2021.*
- European Parliament (2021). *Report on shaping digital education policy.* [https://www.europarl.europa.eu/doceo/document/A-9-2021-0042\\_EN.pdf](https://www.europarl.europa.eu/doceo/document/A-9-2021-0042_EN.pdf)
- European Parliament and Council of the European Union (2006). Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning. *Official Journal of the European Union*, L 394, 30.12.2006, pp. 10-18. <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:394:0010:0018:en:PDF>
- European Training Foundation (2018). *Digital skills and competence, and digital and online learning.* [https://www.etf.europa.eu/sites/default/files/2018-10/DSC%20and%20DOL\\_0.pdf](https://www.etf.europa.eu/sites/default/files/2018-10/DSC%20and%20DOL_0.pdf)
- Eurydice (2022). Assessment in vocational upper secondary education: chapter 6.9. in Eurydice country reports. [https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-upper-secondary-education-1\\_en](https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-vocational-upper-secondary-education-1_en)
- Fahrenbach, F. and Luomi-Messerer, K. (2021). Adopting a socio-technical perspective to rethink the use of ICT in VNFIL. *European Journal of Training*



- and Development, Vol. 46 No. 1/2, pp. 1-21. <https://doi.org/10.1108/EJTD-06-2020-0097>
- Fellinger, J. (2022). *Case study Austria: The future of vocational education and training in Europe: volume 3*. Facilitating vocational learning: the influence of assessments. Thessaloniki: Cedefop.
- Field, S. (2021). *A world without maps? Assessment in technical education: a report to the Gatsby Foundation*.  
<https://www.gatsby.org.uk/uploads/education/reports/pdf/assessment-in-technical-education-simon-field.pdf>
- Finland. National Agency for Education (2018). *Finnish VET in a nutshell*.  
[https://www.oph.fi/download/165770\\_finnish\\_vet\\_in\\_a\\_nutshell.pdf](https://www.oph.fi/download/165770_finnish_vet_in_a_nutshell.pdf)
- Finland. National Agency for Education (2021). Ammatillinen koulutus : osaamisen tunnustamisen ja tunnistamisen ohje. Määräykset ja ohjeet, 5a [Vocational education and training: guidelines for the recognition and validation of competences. Regulations and guidelines, 5a.].  
<https://www.oph.fi/sites/default/files/documents/Ohje%20osaamisen%20tunnistamisesta%20ja%20tunnustamisesta.pdf>
- Finland. National Agency for Education (2022). *Työelämätoimikuntien tehtävät ja kokoonpano*. [Duties and composition of worklife committees].  
<https://www.oph.fi/fi/koulutus-ja-tutkinnot/tyoelamatoimikuntien-tehtavat-ja-kokoonpano>
- Finland. Opetushallitus [Finnish National Agency for Education] (2022). *Tieto- ja viestintätekniiikan perustutkinto*. [Vocational qualification in information and communications technology].  
<https://eperusteet.opintopolku.fi/#/fi/esitys/7861752/reformi/tiedot>
- Fischer, A. et al. (2020). Arbeitsmarktbedarfsanalyse zu beruflichen Kompetenzen und Teilqualifikationen: eine repräsentative Unternehmensbefragung. [Labour market needs analysis for professional skills and partial qualifications: a representative company survey]. Nuremberg: Forschungsinstitut Betriebliche Bildung. f-bb-Bericht, No 2/2020. [https://www.fbb.de/fileadmin/Projekte/BTQ/200731\\_Bericht\\_Arbeitgeberbefragung\\_final.pdf](https://www.fbb.de/fileadmin/Projekte/BTQ/200731_Bericht_Arbeitgeberbefragung_final.pdf)
- France Compétences (2021). *Update of the referencing report of the French qualifications framework to the European qualification framework for lifelong learning and the qualifications framework of the European higher education area*. <https://europa.eu/europass/system/files/2021-07/France-updated%20referencing%20report%20%28EN%29.pdf>
- France. Ministère de l'Éducation nationale, de la Jeunesse et des Sports (2019). *La réalisation du chef-d'oeuvre: vade-mecum: transformer le lycée professionnel: former les talents aux métiers de demain*. Paris.  
[https://cache.media.eduscol.education.fr/file/fam\\_metiers\\_et\\_R\\_pedagogiques/40/4/Vade-mecum\\_realisation\\_chef-d\\_oeuvre\\_1081404.pdf](https://cache.media.eduscol.education.fr/file/fam_metiers_et_R_pedagogiques/40/4/Vade-mecum_realisation_chef-d_oeuvre_1081404.pdf)

- Galli, C. and Paddeu, J. (2021). *What certification for transversal competences in France?* Céreq. Training and Employment, No 153.  
<https://www.cereq.fr/en/what-certification-transversal-competences-france>
- Germany. BMBWF (2022a). *Beurteilung des Prüfungsgebiets 'Diplomarbeit': Rubrics: Humanberufliche Schulen.* <https://www.diplomarbeiten-bbs.at/betreuungsarbeit-und-beurteilung/beurteilung-des-pruefungsgebietes-diplomarbeit>
- Germany. BMBWF (2022b). Zentralmatura [Centralised secondary school-leaving exam].  
<https://www.bmbwf.gv.at/Themen/schule/schulpraxis/zentralmatura.html>
- Germany. Enquete-Kommission 'Berufliche Bildung in der digitalen Arbeitswelt' (2021). *Bericht der Enquete-Kommission Berufliche Bildung in der digitalen Arbeitswelt.* [Report of the Commission of Inquiry Vocational Training in the Digital World of Work]. Berlin: Deutscher Bundestag. Drucksache 19/30950.  
<https://dserver.bundestag.de/btd/19/309/1930950.pdf>
- Gillis, S. and Batemann, A. (1999). Assessing in VET: issues of reliability and validity. Review of research. Leabrook: NCVER.  
[https://www.ncver.edu.au/\\_\\_data/assets/file/0023/7475/assessing-in-vet-435.pdf](https://www.ncver.edu.au/__data/assets/file/0023/7475/assessing-in-vet-435.pdf)
- Grollmann, P. et al. (2007). Beurteilungen in der dualen Berufsausbildung: Praxisbegleitung, Lernförderlichkeit und Qualitätsrelevanz: praktische Perspektiven und Forschungsbedarf. [Assessments in dual vocational training: practical support, learning support and quality relevance: practical perspectives and research needs]. In: Grollmann, P. et al. (eds). *Praxisbegleitende Prüfungen und Beurteilungen in der beruflichen Bildung in Europa*, pp. 263-281.
- Gulikers, J.T.M., et al. (2018). An assessment innovation as flywheel for changing teaching and learning. *Journal of Vocational Education and Training*, Vol. 70, No 2, pp. 212-231. <http://dx.doi.org/10.1080/13636820.2017.1394353>
- Hager, P. and Becket, D. (2007). Philosophical underpinnings of the integrated conception of competence. *Educational Philosophy and Theory*, Vol. 27, No 1, pp. 1-24.
- Haltia, P. (2006). Ammattiosaamisen näytöt: mitä ja miksi? [Skills tests: what and why?]. *Ammattikasvatuksen aikakauskirja* Vol. 8, No 2, pp. 19-28.  
<http://docplayer.fi/54172180-Naytot-arviointeja-ja-itsearviointia.html>
- Harris, K. (2019). Review of learner-centered pedagogy: principles and practice. *Journal of Contemporary Archival Studies*, Vol. 6, No 32.  
<https://elischolar.library.yale.edu/jcas/vol6/iss1/32>
- Hart, J. et al. (2021). *Towards a structured and consistent terminology on transversal skills and competences. 3rd report to ESCO Member States Working Group on a terminology for transversal skills and competences (TSCs).* European Commission and Cedefop.

- <https://esco.ec.europa.eu/en/publication/towards-structured-and-consistent-terminology-transversal-skills-and-competences>
- Hayward, L. (2015). Assessment is learning: the preposition vanishes. *Assessment in Education*, Vol. 22, No 1, pp. 27-43.
- Hiim, H. (2017). Ensuring curriculum relevance in vocational education and training: Epistemological perspectives in a curriculum research project. *International journal for research in vocational education and training*, Vol. 4, No 1, pp. 1-19.
- Ifte.at (2022). *Initiative for Teaching Entrepreneurship: Entrepreneurship Teamchallenge*. <https://www.ifte.at/teamchallenge>
- ILO and World Bank (2021). *Skills development in the time of COVID-19: taking stock of the initial responses in technical and vocational education and training*. Geneva: ILO. [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/-ifp\\_skills/documents/publication/wcms\\_766557.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/-ifp_skills/documents/publication/wcms_766557.pdf)
- Ireland. QQI (2018). *Green paper on assessment of learners and learning*. <https://www.qqi.ie/sites/default/files/media/file-uploads/Green%20Paper%20Assessment%20of%20Learners%20and%20Learning%20March%202018.pdf>
- Ireland. QQI (2020). *Green paper on the qualifications system*. <https://www.qqi.ie/sites/default/files/media/file-uploads/Green%20Paper%20on%20the%20Qualifications%20System-Final.pdf>
- Isopahkala-Bouret, U. (2013). Hyvä suoritus! Osaamislähtöisten arviointikäytäntöjen soveltaminen ja seuraukset [Well done! Application and consequences of competence-based assessment practices]. In: Brunila, K. et al. (eds). *Ammatillinen koulutus ja yhteiskunnalliset eronteot*. Helsinki University Press, pp. 47-62.
- IVA (2012). *Historische schets examinering in het MBO* [Historical sketch of examinations in senior secondary vocational education (MBO)].
- IVA (2022). *Een historische schets: examinering in het MBO: een update*. [Historical sketch: examination in MBO: An update].
- Jakubová, G. (2008). *Metodická príručka: prístup k tvorbe výchovných a vzdelávacích stratégií* [Manual: approaches to the development of educational strategies]. Bratislava: State Institute of Vocational Education.
- James, M. (2006). Assessment, teaching and theories of learning. *Assessment and learning*, Vol. 47, pp. 60.
- Johnson, M. (2019). *European inventory on validation of non-formal and informal learning 2018 update: Estonia*. [http://libserver.cedefop.europa.eu/vetelib/2019/european\\_inventory\\_validation\\_2018\\_Estonia.pdf](http://libserver.cedefop.europa.eu/vetelib/2019/european_inventory_validation_2018_Estonia.pdf)
- Kaldma, K., et al. (2019). Vocational education and training in Europe: Estonia.

- Karusaari, R. (2020). *Asiakaslähtöisyys osaamisperusteisessa ammatillisessa koulutuksessa* [Customer orientation in competence-based vocational education]. University of Lapland.  
<https://lauda.ulapland.fi/bitstream/handle/10024/64059/Karusaari.Riitta.pdf?sequence=1>
- Kennispunt MBO Onderwijs & Examinering (2021). Q&A: onderzoekskader borging en afsluiting. [Q&A: research framework assurance and closure].  
<https://onderwijsenexaminering.nl/publicaties/qa-onderzoekskader-borging-en-afsluiting/>
- Kennispunt MBO Onderwijs & Examinering and Expertisecentrum Inclusief Onderwijs (2020). *Passend examineren: er kan meer dan u denkt: een servicedocument van het Kennispunt Onderwijs & Examinering en het Expertisecentrum Inclusief Onderwijs* [Appropriate examination: more is possible than you think]
- Kilpeläinen, P. (2021). *Ammatillinen osaaminen ja pedagoginen toiminta sosiaali- ja terveystieteiden perustutkinnossa*. [Vocational competence and pedagogical activities in the Vocational Qualification in Social and Health Care].  
[https://karvi.fi/wp-content/uploads/2021/03/KARVI\\_0621.pdf](https://karvi.fi/wp-content/uploads/2021/03/KARVI_0621.pdf)
- Lachmayr, N. and Proinger, J. (2019). Transversale Schlüsselkompetenzen in der schulischen Berufsbildung in Österreich [Transversal key competences in school-based VET in Austria. Current status and fields of development]. BWP, Vol. 48, No 4 pp. 46-50. <https://www.bwp-zeitschrift.de/dienst/veroeffentlichungen/de/bwp.php/de/bwp/show/10242>
- Lachmayr, N. and Proinger, J. (2020). *Developing, assessing and validating transversal key competences in the formal initial and continuing VET (TRACK VET)*.
- Lau, A.M.S. (2016). Formative good, summative bad? A review of the dichotomy in assessment literature. *Journal of Further and Higher Education*, Vol. 40, No 4, pp. 509-525. <https://doi.org/10.1080/0309877X.2014.984600>
- Lee, I. and Mak, P. (2014). Assessment as learning in the language classroom. *Assessment and Learning*, No 3, pp. 67-78.
- Lifelong Learning Platform (2018). *InnoVal: assessment methods for validation: advocacy report: for educational stakeholders and policy-makers*. [http://innoval.eu/wp-content/uploads/2018/10/Advocacy-Report\\_Online-version.pdf](http://innoval.eu/wp-content/uploads/2018/10/Advocacy-Report_Online-version.pdf)
- Lifelong Learning Platform (2021). *Rethinking assessments: prioritising learners' wellbeing*. LLP position paper. December 2021. <https://lllplatform.eu/lll/wp-content/uploads/2021/12/PP21.pdf>
- Loogma, K. and Sirk, M. (2021). *Eriolukorrast tingitud distantsoope kogemused ja mõju kutseharidusele* [Experience of distance learning due to an emergency situation and its impact on vocational education].  
[https://www.hm.ee/sites/default/files/tlu\\_raport\\_distantsope\\_kutseharidus.pdf](https://www.hm.ee/sites/default/files/tlu_raport_distantsope_kutseharidus.pdf)
- Looney, J. (2019). *Digital formative assessment: a review of the literature*. Assess@Learning – Erasmus+ Programme Key Action 3 – Support for policy

- reform – Initiatives for policy innovation.  
<http://www.eun.org/documents/411753/817341/Assess%40Learning+Literature+Review/be02d527-8c2f-45e3-9f75-2c5cd596261d>
- Looney, J. et al. (2022). *Key competences for all: policy design and implementation in European school education: final report*. Luxembourg: Publications Office.  
<https://data.europa.eu/doi/10.2766/1951>
- Luomi-Messerer, K. (2019). European inventory on validation of non-formal and informal learning 2018 update: thematic report: how digital forms of assessment and self-assessment might place a new challenge and opportunity for assessment methodologies.  
[http://libserver.cedefop.europa.eu/vetelib/2019/european\\_inventory\\_validation\\_2018\\_digital.pdf](http://libserver.cedefop.europa.eu/vetelib/2019/european_inventory_validation_2018_digital.pdf)
- Luomi-Messerer, K. et al. (2015). *Cedefop study 'Quality assurance of certification in vocational education and training': final report (30 April 2015)*. Contract No 2013-0117/AO/ECVL/GKO-ARANI/QA&certification/008/13. [Unpublished].
- Luomi-Messerer, K., et al. (2019). *Comparing vocational education and training qualifications: towards a European comparative methodology: work assignment 2: exploring, gathering and analysing national qualifications data*.  
[https://www.cedefop.europa.eu/files/exploring\\_gathering\\_and\\_analysing\\_national\\_qualifications\\_data\\_-\\_comparing\\_vet\\_qualifications\\_wa\\_2\\_draft\\_final\\_report\\_october\\_2019\\_v.03.pdf](https://www.cedefop.europa.eu/files/exploring_gathering_and_analysing_national_qualifications_data_-_comparing_vet_qualifications_wa_2_draft_final_report_october_2019_v.03.pdf)
- Mägi, E. and Preegel, K. (2022). *Case study Estonia: The future of vocational education and training in Europe: volume 3*. Facilitating vocational learning: the influence of assessments. Thessaloniki: Cedefop.
- Malta. Ministry of Education and Employment (MEDE) (2016). *My journey: achieving through different paths: equitable quality education for all*. Floriana: Ministry of Education and Employment. <http://www.myjourney.edu.mt/wp-content/uploads/2016/11/My-Journey-Booklet.pdf>
- Mathou, C. (2019). *European inventory on validation of non-formal and informal learning 2018 update: France*.  
[http://libserver.cedefop.europa.eu/vetelib/2019/european\\_inventory\\_validation\\_2018\\_France.pdf](http://libserver.cedefop.europa.eu/vetelib/2019/european_inventory_validation_2018_France.pdf)
- Mauroux, L. et al. (2016). Writing reflective learning journals: promoting the use of learning strategies and supporting the development of professional skills. In: Ortoleva, G. et al. (eds). *Writing for professional development*. Leiden: Brill, pp. 107-128.
- Messerer, K. (2004). Work paper discussion: work discussion, work-study seminar. In: Markowitsch, J. et al. (eds). *Handbuch praxisorientierter Hochschulbildung*. (Handbook of practice-oriented higher education). Wien: WUV Universitätsverlag, pp. 141-148.
- Michaelis, C. and Seeber, S. (2019). Competence-based tests: measurement challenges of competence development in vocational education and training.

- In: *Handbook of vocational education and training: developments in the changing world of work*, pp. 1-20.
- Montenegro, E. and Jankowski, N.A. (2017). *Equity and assessment: moving towards culturally responsive assessment*. Occasional Paper, No 29. Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA).  
<https://www.learningoutcomesassessment.org/wp-content/uploads/2019/02/OccasionalPaper29.pdf>
- Montenegro, E. and Jankowski, N.A. (2020). *A new decade for assessment: Embedding equity into assessment praxis*. Occasional Paper, No. 42. Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA).  
<https://www.learningoutcomesassessment.org/wp-content/uploads/2020/01/A-New-Decade-for-Assessment.pdf>
- Netherlands. Inspectie van het Onderwijs (2001). *Van WEB tot werkelijkheid: een rapportage over de evaluatie van de WEB*. [From WEB to reality: a report on the evaluation of the WEB]. Utrecht: Inspectie van het Onderwijs.
- Netherlands. Inspectie van het Onderwijs (2016). *Examinering in de reële beroepscontext. Oplossingsrichtingen voor gesignaleerde problemen en dilemma's*. [Examination in the real professional context Solutions for identified problems and dilemmas]. Utrecht: Inspectie van het Onderwijs.  
<http://www.iva-onderwijs.nl/resources/js/tinymce/plugins/imagemanager/files/ThemaonderzoekKwaliteitexaminingreeleberoepspraktijk.pdf>
- Netherlands. Inspectie van het Onderwijs (2021). *Onderzoekskader 2021 voor het toezicht op het middelbaar beroepsonderwijs*. [Examination framework 2021 for the supervision of secondary vocational education]. Utrecht: Inspectie van het Onderwijs.  
<https://www.onderwijsinspectie.nl/onderwerpen/onderzoekskaders/documenten/publicaties/2021/07/01/onderzoekskader-2021-middelbaar-beroepsonderwijs>
- Netherlands. MBO Raad, et al. (2015). *Examenagenda mbo 2015-2020* [Exam agenda MBO 2015-2020].  
[https://www.mboraad.nl/sites/default/files/documents/examenagenda\\_mbo\\_2015-2020.pdf](https://www.mboraad.nl/sites/default/files/documents/examenagenda_mbo_2015-2020.pdf)
- Netherlands. MBO Raad, et al. (2018). *Passende examinering van beroepsspecifieke onderdelen in het mbo voor studenten met een ondersteuningsbehoefte*. [Passende examinering van beroepsspecifieke onderdelen in het mbo voor studenten met een ondersteuningsbehoefte].
- Netherlands. Ministerie van Onderwijs, Cultuur en Wetenschap (1995). *Wet educatie en beroepsonderwijs [Wet]*. [Education and Vocational Education Act]. <https://wetten.overheid.nl/BWBR0007625/2017-01-01#HoofdstukI>



- Netherlands. Ministerie van Onderwijs, Cultuur en Wetenschap (2020). *Ruimte in regels: Een flexibel mbo-aanbod voor leven lang ontwikkelen: Middelbaar beroepsonderwijs*. [Space in rules: a flexible MBO offer for lifelong development: senior secondary vocational education].  
<https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/brochures/2020/09/30/ruimte-in-regels-een-flexibel-mbo-aanbod-voor-leven-lang-ontwikkelen/Ruimte+In+Regels+MBO+Bijlage+onderwijsaanbod.pdf>
- Netherlands. Ministerie van Onderwijs, Cultuur en Wetenschap, (2011). Actieplan: Focus op vakmanschap 2011-2015 [Action plan: Focus on Craftsmanship 2011-2015].
- Netherlands. Onderwijsraad (2001). *WEB: Werk in uitvoering: en voorlopige evaluatie van de Wet Educatie en beroepsonderwijs* [WEB: work in progress: a preliminary evaluation of the Education and Vocational Education Act].
- Netherlands. Onderwijsraad (2018). *Toets wijzer: Naar een eigen(tijdse) wijze van toetsen en examineren. uitgave van de Onderwijsraad*. [Test wiser: towards a contemporary way of testing and examining. publication of the Education Council].  
<https://www.onderwijsraad.nl/publicaties/adviezen/2018/12/13/toets-wijzer>
- Netherlands. Validering Examens MBO (2018). Routes kiezen en verantwoorden [Choosing routes and justifying them].  
<https://onderwijsenexaminering.nl/app/uploads/5.-Publicatie-Routes-kiezen-en-verantwoorden-KP.pdf>
- Netherlands. Validering Examens MBO [Validation examination MBO] (2017). *Eisen aan certificeren autoriteiten* [Requirements for certifying authorities].  
<https://www.stichtingvalideringexamensmbo.nl/wp-content/uploads/2018/07/7.-Basiseisen-aan-certificerende-autoriteiten-2.pdf>
- Neuweg, G.H. (2004). Tacit knowing and implicit learning. In: Cedefop. *European perspectives on learning at work: the acquisition of work process knowledge*. Luxembourg: Publications Office, pp. 130-147.  
[https://www.cedefop.europa.eu/files/3033\\_en.pdf](https://www.cedefop.europa.eu/files/3033_en.pdf)
- Newton, P. (2007). Clarifying the purposes of educational assessment. *Assessment in Education*, Vol. 14, No 2, pp. 149-170.  
<http://dx.doi.org/10.1080/09695940701478321>
- Newton, P. (2021). Input at the fourth debate on the principles of vocational education, part 3: qualifications and assessment [oral statement].  
<https://www.edge.co.uk/news-and-events/news/philosophy-of-vocational-education-debate-qualifications-and-assessment/>
- Niemi, A.M. and Jahnukainen, M. (2018). Tuen tarve, työelämäpainotteisuus ja itsenäisyyden vaatimusammattillisen koulutuksen kontekstissa [Support needs, work-life orientation and autonomy requirements in the context of vocational education and training]. *Ammattikasvatuksen aikakauskirja*, Vol. 20, No 1, pp. 9-28.

- Noack, M. (2021). ESCO's new transversal skills hierarchy (Work in Progress). Presentation at: TRANSVAL-EU Research Webinar.  
<https://www.transvalproject.eu/transval-eu-webinars-to-learn-more-on-how-to-validate-transversal-skills/>
- Nore, H. and Lindberg, V. (2020). Editorial: assessment in Nordic VET. *Nordic Journal of Vocational Education and Training: Special Issue: Assessment in Nordic VET*, Vol. 10, No 3, pp. iii–ix. <https://doi.org/10.3384/njvet.2242-458X.20v10i3>
- Norway. Utdanning.no [Education Norway] (2021). *Fagbrev på jobb*. [Vocational certificate at work].  
[https://utdanning.no/tema/nyttig\\_informasjon/fagbrev\\_pa\\_jobb](https://utdanning.no/tema/nyttig_informasjon/fagbrev_pa_jobb)
- Nyanjom, J. et al. (2020). Integrating authentic assessment tasks in work integrated learning hospitality internships. *Journal of Vocational Education and Training*, pp. 1-23. <https://doi.org/10.1080/13636820.2020.1841821>
- OBESSU (2021). *Through school students' eyes: impact and challenges of COVID-19 on education systems in Europe*.  
[https://www.obessu.org/site/assets/files/2989/obessu\\_covid-19\\_research\\_for\\_web-1.pdf](https://www.obessu.org/site/assets/files/2989/obessu_covid-19_research_for_web-1.pdf)
- OECD (2013). *Synergies for better learning: an international perspective on evaluation and assessment*. Paris: OECD Publishing.  
<https://www.oecd.org/education/school/synergies-for-better-learning.htm>
- OECD (2017). *The OECD handbook for innovative learning environments, educational research and innovation*. Paris: OECD Publishing.  
<https://doi.org/10.1787/9789264277274-en>
- OECD (2019). *Trends shaping education 2019*.  
[https://doi.org/10.1787/trends\\_edu-2019-en](https://doi.org/10.1787/trends_edu-2019-en)
- OECD (2021). *Implications of the COVID-19 pandemic for vocational education and training*. Paris: OECD Publishing. <https://doi.org/10.1787/55afea00-en>
- Olofson, M.W. et al. (2018). An instrument to measure teacher practices to support personalized learning in the middle grades. *Research in Middle Level Education*, Vol. 41, No 7, pp. 1-21.
- Panadero, E. et al. (2018). Self-assessment for learning in vocational education and training. In: *Handbook of vocational education and training: developments in the changing world of work*, pp. 1-12. [https://doi.org/10.1007/978-3-319-49789-1\\_85-1](https://doi.org/10.1007/978-3-319-49789-1_85-1)
- Parasta osaamista (2019b). *Osaamisen arviointiopas opiskelijalle* [Guide about competence assessment for students].  
[https://blogit.gradia.fi/parasta\\_osaamista/wp-content/uploads/sites/20/2019/08/Arviointiopas\\_opiskelijalle\\_NETTI.pdf](https://blogit.gradia.fi/parasta_osaamista/wp-content/uploads/sites/20/2019/08/Arviointiopas_opiskelijalle_NETTI.pdf)
- Parasta osaamista (2019c). *Osaamisen arviointiopas työpaikoille* [Guide about competence assessment for workplaces].  
[https://blogit.gradia.fi/parasta\\_osaamista/wp-content/uploads/sites/20/2019/08/Arviointiopas\\_tyopaikoille\\_NETTI.pdf](https://blogit.gradia.fi/parasta_osaamista/wp-content/uploads/sites/20/2019/08/Arviointiopas_tyopaikoille_NETTI.pdf)



- [content/uploads/sites/20/2019/08/Arviointiipas\\_ty%C3%B6paikoille\\_NETTI.pdf](#)
- Parasta osaamista [Best Competence] (2019a). *Osaamisen arviointi opettajalle* [Guide about competence assessment for teachers]. [https://blogit.gradia.fi/parasta\\_osaamista/wp-content/uploads/sites/20/2019/08/Arviointiipas\\_opettajille\\_NETTI.pdf](https://blogit.gradia.fi/parasta_osaamista/wp-content/uploads/sites/20/2019/08/Arviointiipas_opettajille_NETTI.pdf)
- Pavkov, M. (2022). *Case study Croatia: the future of vocational education and training in Europe volume 3*. Facilitating vocational learning: the influence of assessments. Thessaloniki: Cedefop.
- Pellegrino, J.W. (2014). *Assessment as a positive influence on 21st century teaching and learning: a systems approach to progress*. Singapore: Keynote address in proceedings of the 2014 conference of the International Association for Educational Assessment. [https://www.psy.lmu.de/isls-naples/intro/all-webinars/pellegrino\\_video/pellegrino\\_2014.pdf](https://www.psy.lmu.de/isls-naples/intro/all-webinars/pellegrino_video/pellegrino_2014.pdf)
- Pellegrino, J.W. et al. (2016). A framework for conceptualizing and evaluating the validity of instructionally relevant assessments. *Educational Psychologist*. <http://dx.doi.org/10.1080/00461520.2016.1145550>
- Pepper, D. (2013). *KeyCoNet 2013 literature review: assessment for key competences*. [https://www.obrazovanie.org/rs/uploaded/dokumenta/keyconet-2013-literature-review\\_-assessment-for-key-competences.pdf](https://www.obrazovanie.org/rs/uploaded/dokumenta/keyconet-2013-literature-review_-assessment-for-key-competences.pdf)
- Petanovitsch, A. and Schmid, K. (2019). Internationaler Überblick zu Verfahren und Instrumenten der Kompetenzfeststellung im beruflichen Kontext. [International overview of procedures and instruments for assessing skills in a professional context.]. *Magazin erwachsenenbildung.at*, Vol. 37, pp. 19-37. <https://erwachsenenbildung.at/magazin/19-37/meb19-37.pdf>
- Petanovitsch, A. and Schmid, K. (2020). *Abschlussprüfungen der Sekundarstufe II: Internationaler Review zu Prüfungsformaten und Berechtigungen*. [Final exams of secondary level II. International review of exam formats and entitlements]. Wien: IBW. <https://ibw.at/en/resource/download/2068/ibw-studie-abschlusspruefungen-sekundarstufeii.pdf>
- Petrenko, L. et al. (2020). Analysis of the current state of distance learning in the vocational education and training institutions. *E3S Web of Conferences: The International Conference on Sustainable Futures: Environmental, Technological, Social and Economic Matters (ICSF 2020)*, Volume 166, pp. 10010. <https://doi.org/10.1051/e3sconf/202016610010>
- Poikela, E. (2004). Developing criteria for knowing and learning at work: towards context-based assessment. *Journal of Workplace Learning*, Vol. 16, No 5, pp. 267-274.
- Psfidou, I. (2014). Redesigning curricula across Europe: implications for learners' assessment in vocational education and training. In: *Empires, post-coloniality and interculturality*. Brill Sense, pp. 135-150.

- Rageth, L. and Renold, U. (2017). *The linkage between the education and employment systems: Ideal types of vocational education and training programs*. KOF Working Papers.
- Rageth, L. and Renold, U. (2020). The linkage between the education and employment systems: ideal types of vocational education and training programs. *Journal of Education Policy*, Vol. 35, No 4, pp. 503-528. <https://doi.org/10.1080/02680939.2019.1605541>
- Räisänen, A. and Rökköläinen, M. (2014). Assessment of learning outcomes in Finnish vocational education and training. *Assessment in Education*, Vol. 21, No 1, pp. 109-124. <https://doi.org/10.1080/0969594X.2013.838938>
- Rökköläinen, M. and Ecclestone, K. (2005). *The implications of using skills tests as basis for a national evaluation system in Finland: outcomes from a pilot evaluation in 2002-2003 in Finland*. Helsinki: Finnish National Board of Education.
- Reegård, K. and Dębowski, H. (2020). Exit, voice or loyalty? VET stakeholders' response to large scale skilled emigration from Poland. *International journal for research in vocational education and training*, Vol. 7, No 3, pp. 325-343. [https://www.pedocs.de/volltexte/2021/21236/pdf/IJRVET\\_2020\\_3\\_Reegard\\_Debowski\\_Exit.pdf](https://www.pedocs.de/volltexte/2021/21236/pdf/IJRVET_2020_3_Reegard_Debowski_Exit.pdf)
- Reegård, K. and Rogstad, J. (2019). *Developing, assessing and validating transversal key competences in the formal initial and continuing VET*.
- ReferNet Czechia and Cedefop (2022). *Czechia: piloting the new concept of the Maturita exam*. National news on VET. <https://www.cedefop.europa.eu/en/news/czechia-piloting-new-concept-maturita-exam>
- Renold, U. et al. (2015). *Feasibility study for a curriculum comparison in vocational education and training: intermediary report I: the 20 top performers*. <http://dx.doi.org/10.3929/ethz-a-010713492>
- Riley, S. (2017). *The types of assessment for learning*. EducationCloset. <https://educationcloset.com/2017/07/01/types-assessment-learning/>
- Rintala, H. and Nokelainen, P. (2019). Vocational education and learners' experienced workplace curriculum. *Vocations and Learning*, Vol. 13, pp. 113-130. DOI: <https://doi.org/10.1007/s12186-019-09229-w>
- Rustin, M.J. (2008). Work discussion: implication for research and policy. In: Rustin, M.E. and Bradley, J. (eds). *Work discussion: learning from reflective practice in work with children and families*. London: Karmac, pp. 267-284.
- Sangmeister, J. et al. (2018). Designing competence assessment in VET for a digital future. In: Ifenthaler, D. (ed.). *Digital workplace learning: bridging formal and informal learning with digital technologies*. Cham: Springer.
- Seel, A. (2002). Das eigene Handlungswissen erforschen: nachträgliches lautes Denken als Ausbildungsmethode. [Exploring one's own action knowledge. Thinking aloud after the event as a training method]. In: Klement, K. et al.

- (eds). *Qualitätsstandards Schulpraktische Studien* [Quality standards school practical studies]. Innsbruck: Studienverlag, pp. 195-200.
- Siarova, H. et al. (2017). *Assessment practices for 21st century learning: review of evidence: analytic report*. NESET II report, Luxembourg: Publications Office. <http://dx.doi.org/10.2766/71491>
- Soland, J. et al. (2013). *Measuring 21st century competencies: guidance for educators*. RAND Corporation. <https://asiasociety.org/files/gcen-measuring21cskills.pdf>
- Souto-Otero, M. (2021). Validation of non-formal and informal learning in formal education: covert and overt. *European Journal of Education*, Vol. 00, pp. 1-15. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/ejed.12464>
- Stanwick, J. (2009). Modularization and Modular Delivery of TVET. In: Maclean, R. and Wilson, D. (eds). *International Handbook of education for the changing world of work: bridging academic and vocational learning*. Springer, pp. 2793-2809.
- Stecher, B.M. et al. (1997). *Using alternative assessments in vocational education*. Rand monograph report. [https://www.rand.org/pubs/monograph\\_reports/MR836.html](https://www.rand.org/pubs/monograph_reports/MR836.html)
- Stęchły, W. et al. (2019). TRACK-VET project: Developing, assessing and validating transversal key competences in the formal initial and continuing VET. Country Report Poland. Intellectual Output 2 Report. <https://track-vet.eu/publications>
- Stefanakis, E. (2002). *Multiple intelligences and portfolios*. Portsmouth: Heinemann.
- Stenlund, T. et al. (2017). Group differences in test-taking behaviour: an example from a high-stakes testing program. *Assessment in Education*, Vol. 24, pp. 4-20.
- Stenström, M.L. (2009). Connecting work and learning through demonstrations of vocational skills: experiences from the Finnish VET. In: Stenström, M.L. and Tynjälä, P. (eds). *Towards integration of work and learning*. Amsterdam: Springer, pp. 221-238.
- Stenström, M.L. and Laine, K. (2006a). *Quality and practice in assessment: new approaches in work-based learning*. Jyväskylä: Jyväskylä University Press.
- Stenström, M.L. and Laine, K. (2006b). *Towards good practices for practice-oriented assessment in European vocational education*. Jyväskylä: Jyväskylä University Press.
- Stenström, M.L. and Virolainen, M. (2014). *The history of Finnish vocational education and training. Nord-VET*. [http://nord-vet.dk/indhold/uploads/report1a\\_fi.pdf](http://nord-vet.dk/indhold/uploads/report1a_fi.pdf)
- Stenström, M.L. and Virolainen, M. (2018). The modern evolution of vocational education and training in Finland (1945–2015). In: Michelsen, S. and

- Stenström, M.L. (eds). *Vocational education in the Nordic countries: the historical evolution*. New York: Routledge, pp. 102-123.
- Stenström, M.L. et al. (2006). Practice-oriented assessment in Finnish VET: towards quality assurance through vocational skills demonstrations. In: *Quality and practice in assessment: new approaches in work-related learning*. Jyväskylä: Jyväskylä University Press, pp. 89-120.
- Stobart, G. (2008). *Testing times: the uses and abuses of assessment*. Routledge.
- Stoutjesdijk, F. and Broek, S.D. (2016). *Onderzoek aangepaste examinering voor mbo-studenten met een handicap of chronische ziekte*. [Research adapted examinations for MBO students with a disability or chronic illness].
- Terrail, J.P. (2016). *Pour une école de l'exigence intellectuelle: changer de paradigme pédagogique*. [For a school of intellectual rigor: changing the pedagogical paradigm]. Paris: La Dispute.
- Tutlys, V. (2022). *Case study Lithuania: the future of vocational education and training in Europe: volume 3*. Facilitating vocational learning: the influence of assessments. Thessaloniki: Cedefop.
- Tveit, S. (2014). Educational assessment in Norway. *Assessment in Education*, Vol. 21, No 2, pp. 221–237. <https://doi.org/10.1080/0969594X.2013.830079>
- Tveit, S. (2018). Ambitious and ambiguous: shifting purposes of national testing in the legitimization of assessment policies in Norway and Sweden (2000-2017). *Assessment in Education*, Vol. 25, No 3, pp. 327-350. <https://doi.org/10.1080/0969594X.2017.1421522>
- United Kingdom. Ofqual (2020). *Findings from Ofqual's technical evaluation of apprenticeship EndPoint Assessment materials. Information to support awarding organisations' delivery of End-Point Assessments*. <https://www.gov.uk/government/publications/findings-from-ofquals-technical-evaluation-of-apprenticeship-end-point-assessment-materials>
- Vehviläinen, J. (2020). *Selvitys parasta osaamista -verkostohankkeesta* [Report on the Best Skills Network project]. <https://www.oph.fi/fi/tilastot-ja-julkaisut/julkaisut/selvitys-parasta-osaamista-verkostohankkeesta>
- Vergani, A. (2021). *Country case study Italy: the future of vocational education and training in Europe: work assignment 2*.
- Virolainen, M. (2022). *Case study Finland: the future of vocational education and training in Europe: volume 3*. Facilitating vocational learning: the influence of assessments. Thessaloniki: Cedefop.
- Virolainen, M. and Stenström, M.L. (2015). *Recent Finnish VET reforms and innovations: tackling the current challenges: Nord-VET: the future of vocational education in the Nordic countries*. [http://nord-vet.dk/indhold/uploads/report1c\\_fin.pdf](http://nord-vet.dk/indhold/uploads/report1c_fin.pdf)
- Vogt, B. (2021). *Assessment that supports performance? Findings on curricular result-orientation from a classroom-study in Sweden*. Paper presented at

- ECER 2021.  
<https://eera-ecer.de/ecer-programmes/conference/26/contribution/50130/>
- William, D. (2021). Why there is no such thing as a formative assessment. *Assess for Learning*, Vol. 2, 19.4.2021.  
[https://www.assessforlearning.eu/documents/20121/38936/expert+article+2\\_v.3.pdf/](https://www.assessforlearning.eu/documents/20121/38936/expert+article+2_v.3.pdf/)
- Winch, C. (2016). Assessing professional know-how. *Journal of Philosophy of Education*, Vol. 50, No 4, pp. 554-572.  
<https://doi.org/10.1111/1467-9752.12153>
- Wittig, W. and Neumann, F. (2016). *Teilqualifikationen in der beruflichen Bildung: Einsatz, Verbreitung und Rahmenbedingungen*. [Partial qualifications in vocational training: use, dissemination and framework conditions]. Nuremberg: FBB. <https://www.researchgate.net/project/Teilqualifikationen-in-der-beruflichen-Bildung>

## Projects

- Assess@Learning*. Erasmus+ Programme Key Action 3: support for policy reform: initiatives for policy innovation. <https://www.assessforlearning.eu/>
- InnoVal*: innovative assessment methods for validation. Erasmus+ Programme Key Action 2. <http://inno-val.eu/innoval-project/>
- TALOE: time to assess learning outcomes in e-learning*. <https://taloe.up.pt/>
- TACK-VET*: Developing, assessing and validating transversal key competences in the formal initial and continuing VET <https://track-vet.eu/>
- TRANSVAL-EU: validation of transversal skills across Europe*. Erasmus+ Programme Key Action 3: support for policy reform: initiatives for policy innovation. <https://www.transvalproject.eu>
- VALIKOM: assess and certify vocational skills*.  
<https://www.validierungsverfahren.de/en/home>
- VISKA: visible skills for adults*. Erasmus+ Programme Key Action 3: support for policy reform: initiatives for policy innovation. <https://viskaproject.eu>

## Annex 1.

### Link to the previous study and to other themes of the *Future of VET* study

Assessment was not specifically addressed in the study on the changing nature and role of VET (Cedefop, 2020e). However, research related to the epistemological and pedagogical-didactical perspective of the three-perspective model developed in the previous project (and further developed in (Cedefop, 2022, forthcoming-d) points to changes in the content of qualifications, in the teaching and learning approach, and in the relationships between teachers/trainers and learners, which in turn influences assessment practices.

Therefore, there are clear links between this part of the overall study and the previous two parts. The first part (Cedefop, 2022b) refers to changes related to the content and profile of VET qualifications, i.e. the intended learning outcomes (intended curriculum); the second (Cedefop, 2022, forthcoming-a) to the delivery models of VET with specific focus on delivery models and structures of VET programmes as well as on the institutional basis of IVET <sup>(73)</sup>. This third part of the study complements these perspectives by focusing on the forms and methodologies (including assessment specifications and standards) used to assess VET learners' actual learning outcomes to see how well they match what was intended (attained curriculum). The change processes that are analysed in the previous research phases are also considered relevant for assessment practices.

- (a) Theme 1: it is assumed that the intended learning outcomes form the basis for the development of assessment standards and specifications. It is therefore expected that changes related to these intended learning outcomes as well as to the underlying theories will – at least in part – also be reflected in assessment practices. Such changes might refer to:
- (i) a decrease in the number of IVET qualifications and broadening of their scope;
  - (ii) increasing emphasis on general subjects (STEM-subjects as well as literacy and languages);
  - (iii) increasing emphasis on transversal skills and competences (also referred to as soft skills, 21st century-skills, key competences etc.), such

---

<sup>(73)</sup> Since the focus of the second part of the overall study is more on institutional changes and less on pedagogies, the concept of the 'implemented curriculum' only partly fits here.

- as problem-solving, critical thinking, communication, collaboration and learning to learn;
- (iv) increasing emphasis on research-based knowledge needed (i.e. appreciation of the role of research and ability to play an active role in work-place innovation and development).
  - (b) Theme 2: the structures of IVET qualifications and programmes (e.g. whether they are divided into modules or units) also influence the possible uses of assessment approaches. For example, it is only possible to obtain a qualification by accumulating its parts if it actually consists of units or modules that can be assessed separately. However, in both cases (with or without modules or units) a final (endpoint) assessment may be used. The institutional background of qualifications delivery may also influence assessment practices. For example, in hybrid institutions the assessment may be carried out in whole or in part (e.g. for general subjects) outside the VET provider (external assessment).
  - (c) Theme 3: there is also a link between this part and the fourth part of the overall study (Cedefop, 2022, forthcoming-c), as it is expected that changes related to the target group of IVET (through the increasing openness of IVET to adults, possibly with work experience) will be linked to changes in the assessment approach. For example, the pedagogical approach to conducting formative assessments would need to be adapted to adults, and it may also be useful to open up assessment approaches, especially for this target group, to take into account learning outcomes achieved in non-formal and informal learning contexts (e.g. work context).

## Annex 2.

### Assessment-related questions in research tools used in the previous parts of the overall study

#### A.1.1. ReferNet questionnaires and flash case studies (WA1)

The ReferNet questionnaires (for 28 countries) include the following questions related to ‘implications on assessment’ (that might potentially have been further elaborated in the 22 flash country case studies– WA1):

- (a) A.1.3: ‘Is this balance (of occupation-specific skills, general subject knowledge, and transversal skills and competences) also reflected in assessment practices? Is there any evidence that changes in the balance over time have had an influence on assessment practices (e.g. in terms of strengthened emphasis on transversal skills and competences; or in terms of the balance between internal or external assessments)? Please provide references.’
- (b) B.2.3: ‘Is there any evidence that such change (in the balance between workplace learning, practical learning in workshops and classroom instruction) had an influence on assessment forms (e.g. in relation to the methods or location of assessments)? Please provide references.’

#### A.1.2. Country case studies (WA2)

The country case studies (WA2) include the following assessment-related questions:

- (a) Chapter 2 (Blurring of boundaries between general education and IVET at upper secondary level) question d): ‘Are these changes in content reflected or have they affected the teacher-student relationship; role of teachers and assessment? Do these changes eventually reflect or relate to a general shift in the parity of esteem, purpose or justification of VET?’
- (b) Chapter 6 (Conclusion: harmonisation, diversification, pluralisation, academic/vocational drift) summarises the observed trends (and their causes) including: ‘the way in which IVET is delivered and assessed, and whether this reveals common patterns across courses and programmes.’



### A.1.3. VET provider survey (WA2)

#### Assessment-related questions in the VET provider survey

4. Thinking about the changes observed in the delivery and content of VET over the past 10 years, have these resulted in any of the following for your institution? Please select the three most important options. Answer options include: 8 Changes in the way assessment is conducted.

#### C: ASSESSMENT OF VET STUDENTS

The following questions ask about the assessment of learners on initial vocational education and training programmes at your institution.

1. What is currently used at your institution as a basis or reference point for assessment leading to the award of a qualification?

Please tick all that apply

1. Qualifications standards
2. National framework curriculum
3. Provider-level curriculum
4. Nationally determined assessment standards and criteria
5. Locally developed assessment standards and criteria
6. Other, please specify \_\_\_\_\_
9. Don't know

2. Reflecting on the role of assessment in relation to the award of a qualification in your institution, how this has changed over the last 10 years? Please indicate the extent to which there has been change in the grid below.

	Increased a great deal	Increased a little	Stayed the same	Decreased a little	Decreased a great deal	Not applicable
The assessment of learners' transversal/soft skills (e.g. being able to work with others) has....						
Validating and recognising non-formal and informal learning (e.g. work experience) at our institution has....						
The award of qualifications based on separately assessed modules or units (without a single final assessment at the end of a VET programme) has...						

	Increased a great deal	Increased a little	Stayed the same	Decreased a little	Decreased a great deal	Not applicable
The involvement of employers or other labour market stakeholders in the assessment of our VET learners has...						
Assessment carried out by external organisations has...						
The use of assessment results (i.e. student grades) to monitor the performance of our institution has...						
Our institution's autonomy to conduct and organise assessment has...						

Source: Cedefop.

3. Thinking about how learners are assessed during the learning process in VET programmes offered at your institution, do you use any of the following practices? If so, to what extent have you observed an increase or decrease in the following practices over the last 10 years? Please tick the box in the grid below which best represents your view.

	Not been used	Increased	No change	Decreased	Don't know
Digital assessment or other computer assisted tests have...					
Self-assessment of VET learners has...					
Skills demonstrations in real work environments have...					
Individualised and flexible approaches (e.g. use of portfolios to demonstrate student progress) have...					
Standardised approaches (e.g. multiple-choice or other closed test formats) have...					

Source: Cedefop.

## G: THE FUTURE OF VET

The following questions ask for your views about likely developments over the next 10 years. We would very much like your considered views on how you see VET developing.

Answer options:

The inclusion of transversal/soft skills (e.g. being able to work with others) in the assessment of our VET learners will...

The use of assessment standards based on learning outcomes at our institution will...

4. Thinking about the long-term effects of COVID-19, for which of the following areas would you expect the most sustainable change at your institution?

Answer option 3. The way we assess learning.

## Annex 3.

### Link between research questions and dimensions of assessment

The table below presents the link between the research questions and the dimensions and features of assessment identified. The questions in bold are the key research questions underpinning this study; the sub-questions were added by the research team to support the empirical investigation. The question of changes in relation to assessment practices, the drivers of change, the factors influencing the development of assessment in IVET in the past and in the future, are not covered by these dimensions and features.

Research question	Dimension/feature
<b>1. Which are the dominant assessment forms applied in IVET and how have these evolved over time?</b>	<b>B. What: content:</b> 5. Learning contexts <b>D. How: methods and tools:</b> 8. Sources/methods for collecting evidence related to theoretical knowledge 9. Sources/methods for collecting evidence related to practical knowledge 10. Internal/external 11. Environment 12. Location 13. Authenticity 14. Standardisation 15. Assessors 16. Learner involvement (Quality: reliability, validity, impartiality/fairness)
1.1 To what extent and how have the main purposes and functions of assessment changed over time?	<b>A. Function and purpose</b> 1. Purpose of assessment 2. Basis for awarding a qualification
1.2 What are the drivers of change that shape developments and reforms of assessment practices?	
1.3 To what extent and how has the current COVID-19 pandemic affected assessment in IVET (which adjustments are only of a temporary nature and which changes will be maintained permanently)?	<b>D. How: methods and tools:</b> 11. Environment
<b>2. To what extent are assessments specifications and standards used to support summative assessments?</b>	<b>C. References</b>
<b>3. To what extent are assessment specifications aligned with qualifications and programme standards?</b>	<b>E. Alignment</b>

Research question	Dimension/feature
3.1 To what extent are standards, curricula, pedagogies and assessments aligned to each other?	E. Alignment
<b>4. To what extent could a broadening of the skills and competence base of IVET influence assessments</b> - given increased emphasis on general subjects? - given greater focus on transversal skills and competences?	B. What: content: 3. Types of learning outcomes
4.1 What does the relative change of assessment practices over time tell us about changing priorities regarding skills content and pedagogical approaches?	B. What: content: 3. Types of learning outcomes E. Alignment
4.2 Given the central role of transversal skills and competences in addressing change; how can these skills and competences be assessed?	D. How: methods and tools: 8. Sources/methods for collecting evidence related to theoretical knowledge 9. Sources/methods for collecting evidence related to practical knowledge 10. Internal/external 11. Environment 12. Location 13. Authenticity 14. Standardisation 15. Assessors 16. Learner involvement
4.3 To what extent (whether and how) could a development towards combined and hybrid institutions influence assessment practices?	D. How: methods and tools: 10. Internal/external 14. Standardisation
4.4 To what extent are internal and external assessments balanced and what could be the impact of assessing general subjects outside the VET institutions?	D. How: methods and tools: 10. Internal/external 14. Standardisation

Source: Cedefop.

# The future of vocational education and training in Europe

Volume 3

The influence of assessments on vocational learning

This report focuses on the role played by assessment in the delivery of VET. A key question is whether the objectives set in national curricula, by qualifications standards and in programme descriptions are improved or undermined by dominant assessment approaches. An additional question is how assessment approaches address increasingly complex requirements in general knowledge and transversal skills and competences. Can current methodologies be relied on and do they provide a valid picture of achieved learning? The study provides important insights into the evolution of assessment for VET in Europe and can be used as a basis for developing future research in this area.

5590 EN - TI-BC-22-007-EN-N - doi:10.2801/067378



**CEDEFOP**

European Centre for the Development  
of Vocational Training

Europe 123, Thessaloniki (Pylea), GREECE  
Postal: Cedefop service post, 570 01 Themi, GREECE  
Tel. +30 2310490111, Fax +30 2310490020  
Email: [info@cedefop.europa.eu](mailto:info@cedefop.europa.eu)  
[www.cedefop.europa.eu](http://www.cedefop.europa.eu)



Publications Office  
of the European Union

