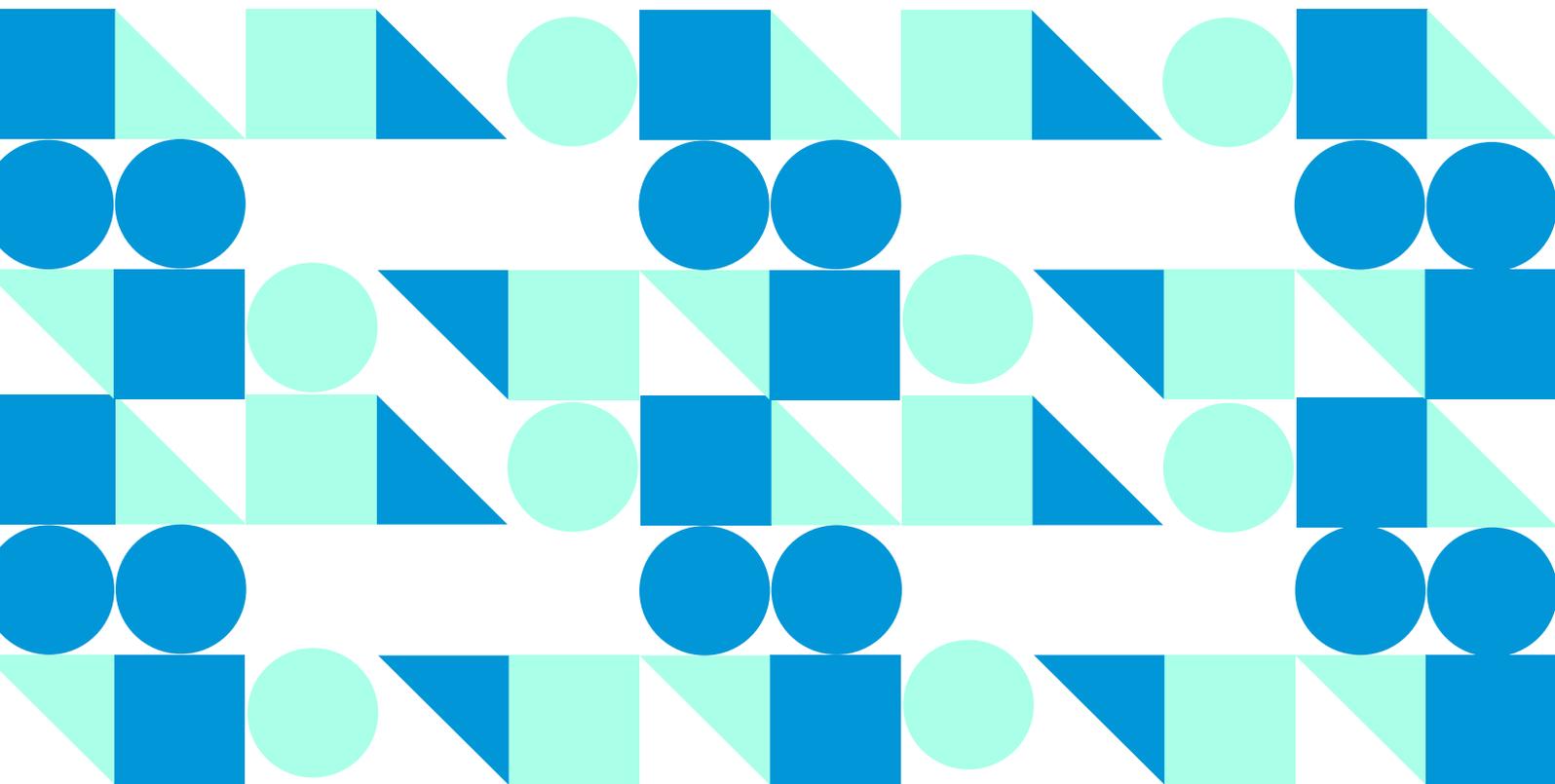# CEDEFOP

Research paper

Key competences in initial vocational education and training: digital, multilingual and literacy

CEDEFOP

Key competences in initial vocational education and training: digital, multilingual and literacy

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This publication contains UK data and analysis based on research conducted before the United Kingdom's exit from the European Union on 31 January 2020. EU averages or other statistical parameters including the UK reflect the situation in the European Union before 31 January 2020 and should not be considered as representative of the situation in the EU thereafter. In this context 'EU-28' refers to the 28 EU Member States prior to 31 January 2020.

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.
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Jürgen Siebel, *Executive Director*
Barbara Dorn, *Chair of the Management Board*

Foreword

People who are equipped with key competences have lifelong advantages over those who have not mastered literacy, digital skills and languages. These competences, together with other skills, are fundamental assets for every European citizen for employability, wellbeing and lifelong learning.

However, acquisition of key competences remains a challenge in Europe. Literacy is crucial for the development of knowledge and understanding across all other subjects. It is also linked to better memory and thinking performance. However, more than one in five 15-year-olds in the EU still have low reading skills, and this has not improved in recent years.

Knowledge of languages improves communication and cooperation, and helps better adjustment to modern multicultural societies. In contrast, limited multilingual competence may prevent individuals from exploiting their full potential. On average, an EU learner studies 1.4 foreign languages in upper secondary education; the figure is lower in vocational education and training (VET).

We also need to invest more in digital competences to master the digital transformation. According to Cedefop's skill forecasts and its European skills and jobs survey, in the next decade more jobs are expected to require more digital competences. However, a striking 43% of Europeans do not have basic digital competence and around a third of employees who need digital competences are at risk of skill gaps.

VET plays an important role in addressing these challenges and supporting the acquisition of key competences. This is especially the case now, when understanding public health advice and using online shopping to save a visit to a grocery store may become lifesaving.

This comparative study provides insights into the extent that the three selected key competences – digital, multilingual and literacy – are embedded and promoted in initial upper secondary VET in Europe. The analysis is provided at three levels: national policies, qualifications and curricula, including main areas of policy intervention; reference documents, programme delivery, and assessment standards; and teacher/trainer competences.

We hope that this report will help policy-makers, social partners, scholars and VET practitioners better understand what works and also the challenges when supporting key competences in initial VET. We also hope that it will trigger further research questions, especially about the effectiveness and efficiency of current policies.

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Executive summary

Key competences in vocational education and training

Key competences are those that all people – from the young to seniors – need in order to develop personally, integrate into society and cope with change, including in the labour market. They are transversal in nature and form the basis for all other competences.

The means for acquiring key competences comprise various learning paths, including vocational education and training (VET). However, little is known at European level about how exactly key competences are integrated in VET – education and training that mainly aims to equip learners with competences required on the labour market – and how this process is supported at national level.

Embedding key competences in education and training is a complex process. It involves introducing/adapting policies and practices to improve the quality of education and to ensure that learning and teaching continue to reflect the needs of both individuals and society at large. Embedding key competences in VET is even more complex, considering its diverse and heterogeneous nature.

This Cedefop study analyses a set of three key competences: digital, multilingual and literacy.

Analytical framework and methodology

The study analyses the extent to which the selected key competences are included in initial upper secondary VET (state of play) and examines interventions that helped promote and/or embed them in VET in 2011-18.

Promoting key competences in IVET is defined in this study as the act of mentioning and raising awareness of them. This is a broad category including all policies that were selected in the scope of this study. The main distinction made among policies promoting key competences is whether they have an objective to embed key competence(s) into IVET.

Embedding key competences in IVET is defined in this study as the activity undertaken by public policies to increase the extent to which they are included in IVET, through changes in reference documents, such as education and occupational standards, programme delivery, assessment standards, and teacher/trainer competences.

In contrast, 'inclusion of key competences in IVET' refers to the static picture of the way that key competences are dealt with in IVET.

The comparative analysis was made for all EU Member States, Iceland and Norway and the UK at three levels: policies, qualification types ([1]) and curricula (three programmes per VET system). Data were collected by experts through desk research and validated by 39 focus groups. A total of 259 individual interviews were conducted, where focus groups could not be organised.

In addition, the research aimed to reveal the extent to which policies promoting/embedding key competences had an impact on initial VET. In this research phase, country experts were asked to assess the effectiveness and efficiency of national policies to promote the three selected key competences (literacy, multilingual and digital competences). Links were identified between the objectives of EU policies and national policy objectives and their implementation. In addition to collecting data through a research template, country experts conducted interviews with high-level policy-makers and other stakeholders (196 expert interviews). However, given many contextual factors that are outside the scope of the current research, conclusions for this task are limited.

Chapters on digital, multilingual and literacy competences can be read as separate reports that are complemented by a cross-competence analysis.

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[1] Qualification type refers to a group or cluster of qualifications within a country that share specific characteristics, for example objectives, programme duration and access requirements. Usually, the qualification types are mentioned in qualifications frameworks.

Key findings across key competences

Broad policies with a focus on digital

(a) The study revealed a high number of policies (79) promoting literacy, multilingual and/or digital competence in IVET in 2011-18 in the EU-27, Iceland, Norway and the UK. However, these policies often overlap, with a focus on more than one key competence at once.

(b) Digital competence received most attention from policy-makers. It is also more often addressed by policies exclusively devoted to one key competence (13), compared with literacy and multilingual competences (four and three policies respectively) that are usually promoted by broader policies.

(c) More than half of the policies have a broader scope than IVET; only 41% of policies promoting multilingual and digital competences focused exclusively on IVET; this share is higher for literacy (53%).

(d) Promoting the selected key competences in IVET is usually linked to broader societal objectives. Compared to the other competences, policies on multilingual competence more often have broader objectives related to supporting lifelong learning (37% of the policies). Social inclusion is slightly more often the broader objective of policies promoting literacy compared to the other competences (25% of the policies). Policies promoting digital competence have employability as the most common broader societal objective (33% of the policies).

Promoting versus embedding

(a) 68% of policies promoting literacy, 67% of policies promoting digital competence and 59% of policies promoting multilingual competence have the explicit objective to embed these competences in IVET. The remainder promote the selected key competences without embedding them in IVET.

(b) Policies embedding key competences into IVET are found to contribute to observable changes in programme delivery, reference documents, teacher/trainer training and assessment standards.

(c) In the reference period (2011-18), two-thirds of policies completed their planned activities. Most of these activities reached their immediate objectives.

EU priorities matter

(a) National policies only occasionally refer directly to the EU VET agenda, including the Bruges communiqué and the Riga conclusions. However, policies tend to be in line with or follow the direction provided by these EU policy documents. Almost half of policies refer to other EU and international initiatives, especially those promoting multilingual competence.

(b) In the reference period (2011-18), most policies were adopted in 2014 and 2015. The peak can be explained by the adoption of many strategies with a 2014-20 timeframe and is also linked to the EU policy planning schedule (2007-13; 2014-20).

Stand-alone subjects for literacy/multilingual, integrated approach for digital

(a) Literacy competence is included in all 78 VET qualification types identified in the EU-27, Norway, Iceland and the UK; multilingual and digital competences are included in almost all qualification types.

(b) Stand-alone subjects/modules are the most common way of including literacy and multilingual competence in IVET. For digital competence, integration is key.

'Pure' key competence or occupation-related?

(a) Based on the analysis of sample curricula, digital and multilingual competences are mainly perceived as 'pure' key competences compared to occupation-specific competences.

(b) There are important differences by sector. Multilingual competence is most often seen as an occupation-specific competence in the accommodation and food service sector (32% of all programmes in this sector) compared to digital competence which is considered an occupation-specific competence mainly in the manufacturing sector (41% of all programmes in the sector).

Common challenges

(a) The challenges in implementing key competence policies are similar to those of education policies in general. They are mainly linked to the broad scope of policies (not focusing exclusively on IVET and promoting key competences), vague and abstract objectives, and lacking clearly operationalised implementation plans, making it difficult to monitor results as well as lack of resources.

(b) Effective policies require targeting the selected key competence, take better into account IVET sector characteristics and avoid designing the policy attuned to the general education characteristics. Involvement of VET providers and other stakeholders is crucial in designing such policies.

Digital competence

Policies

(a) Between 2011 and 2018, all but one country adopted policies that promoted digital competence in IVET. In total, there were 64 such policies, ranging from those focusing exclusively on IVET and digital competence to policies that

cover the whole education sector and multiple key competences. 13 policies exclusively focused on digital competence.

(b) Most (39 of 64) policies that promoted digital competence in IVET were strategies, generally having an agenda-setting purpose and presenting longer-term visions rather than short-term, practical implementation plans.

(c) While the policies promote digital competence in IVET, this is done in combination with addressing other broader societal objectives. One-third of all policies that promote digital competence in IVET have employability as the main societal objective, and one-fifth have social inclusion and lifelong learning as the main societal objective.

(d) Almost half (44%) of the 64 policies refer to EU or international initiatives, such as the European digital agenda, e-competence, DigCompOrg, the European computer driving licence, and the Council recommendation on key competences for lifelong learning. References to EU initiatives set the scene or have a direct effect on policy content.

(e) Most policies (66%) adopted in 2011-15 have successfully completed the implementation of the anticipated activities. More recent policies (2016-18) were more often still in an implementation phase (39% completed) but may already have contributed with partial results. Policies that did not complete the activities as planned were rare (2% until 2015, 4% thereafter).

(f) Of the 64 policies, 37 seek to embed digital competence through programme delivery, 23 focus on reference documents, 28 on teacher training, and 19 on revising assessment standards. This shows how, in practice, most policies combine at least one or more of these areas in a single policy and underpins the importance of such integrated policies.

(g) A total of 21 policies mention digital competence in IVET but do not focus on embedding digital competence into IVET (undertake an activity to reach a better inclusion).

Qualification types

(a) In a school-based setting, digital competence is predominantly integrated with other subjects (25 of the 49 school-based qualification types).

(b) In school-based settings that included elements of work-based learning in workshops and laboratories, a combination of stand-alone and integrated digital competence is usually provided (nine of the 23 types that integrate work-based learning in schools).

(c) In apprenticeships, digital competence is mainly integrated in the learning of other competences.

Individual programmes

(a) While sector differences exist, digital competence is most commonly delivered as integrated in other subjects (35%).

(b) In work-based programmes with limited school-based learning, digital competence is equally often delivered as a stand-alone subject/module (30%) or integrated in subjects/modules, such as occupation-specific ones (30%). In school-based programmes that include some type of work-based learning in school workshops/laboratories or internships, digital competence is mostly integrated in other subjects (36%) or is delivered both as a stand-alone subject/module and as integrated in other subjects (32%). An example for the latter case is when digital competence forms part of the general education subjects and at the same time is also integrated in job-specific subjects.

(c) The foundation or non-foundation role of a competence indicates how this competence supports development of other competences within a VET programme. In most programmes digital competence is non-foundational (46% in manufacturing, 49% in construction and 43% in accommodation/food service sector). The (non-)foundation role of a competence indicates whether is required for the development of other competences within a VET programme.

Assessment

(a) Digital competence is assessed in 81% of the 105 training programmes (sample). Most often, digital competence is not assessed in the construction sector (29%).

(b) Most common assessment methods are written (24%) and oral tests (20%).

Teachers/trainers

(a) Given that digital competence is mostly integrated in other modules, many programmes have no specific requirements for teachers of general or occupational subjects for mastering it. However, they are assumed to be capable of using digital tools in teaching. Beyond this, it depends on individual teachers whether they participate in further training focusing on use of interactive forms and methods in the education process.

(b) Most teachers of digital modules/subjects have a higher education degree (77%) in education, informatics or a related discipline (such as mathematics) or in the subject area of the programme. Often, a higher education degree other than in the education field must be accompanied by pedagogy training.

Pure versus occupation-related

(a) In 47% of programmes, digital competence is considered a pure key competence. In 27% of programmes, it is seen as an occupation-specific

competence. In 18% of programmes, digital competence is perceived to be both a pure key competence and an occupation-specific competence.

(b) In the manufacturing sector, digital competence is more often perceived as an occupation-specific competence (41% of programmes) compared to 26% in the accommodation and food service sector, and 16% of programmes in the construction sector.

Defining the digital

(a) Definitions of digital competence in laws, qualification standards and framework curricula (related to the individual programmes explored) differ considerably between VET systems.

(b) Most national digital competence definitions reflect either entirely or partly the 2018 EU definition in the recommendation on key competences for lifelong learning. No pattern has been identified as to whether programmes in the three sectors focus on different aspects of the EU definition. Entirely means that all elements of the formal EU definition are included in the national definition whereas partly indicates that only some elements are found. Partly can also mean that the national definition generally covers but is not as specific as the formal EU definition, or that there are national variations of elements of the formal EU definition.

Multilingual competence

Policies

(a) Between 2011 and 2018, all but eight EU+ countries adopted policies that promoted multilingual competence in IVET. There were 41 policies that promoted multilingual competence but only three focused solely on this key competence. These policies range from those focusing exclusively on IVET and multilingual competence to those that cover the whole education sector and multiple key competences.

(b) Most (18 of 41) policies that promote multilingual competence in IVET are strategies, generally with an agenda-setting purpose and presenting longer-term visions rather than short-term, practical implementation plans.

(c) Half (51%) of the 41 policies refer to EU or international initiatives, such as the Common European framework of reference for languages (CEFR) and the Council recommendation on key competences for lifelong learning. Such references set the scene or have a direct effect on policy content.

(d) Most policies (67%) adopted in 2011-15 have successfully completed the implementation of the anticipated activities. Recent policies (2016-18) are more often still in an implementation phase (38% completed) but may have

already contributed with partial results. Policies that did not complete the activities as planned are rare (3%).

(e) Of the 41 policies, 23 seek to embed multilingual competence through programme delivery, 16 focus on reference documents, 12 on teacher/trainer training, and 12 on revising assessment standards. Most policies focus at the same time on more than one of these areas, underlining the importance of an integrated, holistic approach. A total of 17 policies promote literacy competence but do not aim to embed it in VET.

Qualification types

(a) Multilingual competence is not included in nine of the qualification types that comprise IVET qualifications in the EU+ countries. The most prevalent way to include multilingual competence is as a stand-alone subject/module.

Individual programmes

(a) Multilingual competence is most frequently delivered as a stand-alone subject/module (51% of all 105 programmes), with little sector variation.

(b) Comparing VET learning modes, the competence is slightly more frequently delivered as a stand-alone subject/module in school-based programmes (often including work-based learning elements) than in work-based programmes (59% and 55%, respectively).

(c) Multilingual competence is delivered in an instructor/teacher-centred approach in more than two-thirds of programmes. Depending on the individual teacher, the approach can be combined with interactive/participative methods, use of online platforms, and self-learning.

Assessment

(a) From all programmes that include multilingual competence (87 of 105 programmes), this competence is assessed in 85. Most often, it is not assessed in the construction sector (29%).

(b) Most common assessment methods are written (33%) and oral tests (30%).

Teachers/trainers

(a) In all programmes that include multilingual competence, teachers have a higher education degree (87 programmes) in a foreign language, education field or a specific professional field.

(b) In almost all VET programmes, teaching professionals are referred to as teachers; the distinction between teachers and trainers is not so apparent.

(c) Initial teacher training is well defined for all the programmes reviewed (expressed in formal qualification requirements); continuing professional development (CPD) is less so. Nevertheless, CPD is explicitly referred to in 50% of the programmes reviewed.

Pure versus occupation-related

(a) In 43% of programmes, multilingual competence is considered to be a pure key competence, in 21% both a pure key competence and an occupation-specific competence; in 19% it is an occupation-specific competence, while it is not delivered in 17% of programmes.

(b) The way multilingual competence is perceived differs across sectors. It is most often perceived as occupation-specific in the accommodation and food service sector (32%) compared to the manufacturing (17%) and construction sectors (9%).

Defining the multilingual

(a) Definitions of multilingual competence in reference documents differ considerably between VET systems.

(b) In more than 70% of the programmes, the national definition of multilingual competence reflects either entirely or partly the EU definition.

(c) The EU definition is more often entirely reflected in the accommodation and food service sector (43%) than in the manufacturing sector (26%) and construction sector (23%). When the EU definition is partly reflected (41% of the cases), the least covered elements are knowledge of functional grammar, awareness of the main types of verbal interaction, and registers of languages.

Literacy

Policies

(a) Between 2011 and 2018, all but three countries adopted and started implementing policies that promoted literacy competence in IVET. There are 53 policies that promoted literacy competence but only four focused solely on this key competence. They can range from policies focusing exclusively on IVET and literacy competence to those that cover the whole education sector and multiple key competences.

(b) Policies that promote literacy in IVET are more often strategies (25 of 53), generally having an agenda-setting purpose and presenting longer-term visions rather than short-term, practical implementation plans.

(c) More than one-third (38%) of the 53 policies refer to EU or international initiatives.

(d) Most policies (73%) adopted in 2011-15 have successfully completed their anticipated activities. More recent policies (2016-18) are more often still in the implementation phase (31% completed). Policies that did not complete the activities as planned are rare (8%).

(e) Of the 53 policies, 32 seek to embed literacy competence through programme delivery, 25 focus on reference documents, 17 on teacher/trainer training, and 16 on revising assessment standards. Most policies focus at the same time on more than one of these areas, underlining the importance of integrated, holistic policies. A total of 17 policies promote literacy competence but do not embed it in VET.

Qualification types

(a) The most prevalent way to include literacy in the 78 qualification types that comprise IVET qualifications in the countries is as a stand-alone subject/module. Literacy is included in all qualification types but it is not always stated in reference documents and not always assessed;

(b) In school-based settings, literacy is mainly delivered as a stand-alone subject/module (27 of 49 school-based qualification types). In these cases, literacy is a general education subject taken by IVET students from different disciplines and sectors;

(c) In school-based qualification types that include work-based learning in school workshops and laboratories literacy is mainly delivered both as a stand-alone subject/module and integrated in occupation-specific subjects (12 of 23 qualification types). It is a general education subject but contextualised in the work environment;

(d) In apprenticeship programmes, literacy competence is mainly integrated in other subjects or delivered both as a stand-alone subject/module and integrated in other subjects/modules.

Introduction

In the last two decades, increasing attention has been given to vocational education and training (VET) in Europe. It has been considered one of the key drivers for a more dynamic and competitive economy in Europe that will deliver sustainable growth, generate more and better jobs, and create greater social cohesion (European Commission, 2004).

The Copenhagen declaration (Council of the European Union; European Comisssion, 2002), as part of the Lisbon strategy, defined the contribution of VET to achieving the goal of Europe becoming the world's most dynamic knowledge-based economy (European Commission, 2004). It has initiated a process of closer cooperation in VET in Europe (Council of the European Union; European Commission, 2004, 2006, 2008 and 2010) and a shift to competence-based education and training through the development of common frameworks and tools facilitating transparency, quality of qualifications and mobility.

In 2006, the recommendation on eight key competences for lifelong learning was adopted, contributing to personal fulfilment, social inclusion, active citizenship, and employability (European Parliament; Council of the European Union, 2006). It was updated in 2018 (European Commission, 2018a).

In initial VET (IVET), the importance of key competences is underpinned by the belief that young people need to learn to cope with change, complexity and the need for continuous skills development along with developing technical skills (European Commission, 2012a). The Bruges communiqué confirms the need for VET to contribute to excellence and equity in lifelong learning and generate benefits to individuals beyond income and employment, for example by fostering self-esteem, confidence, self-direction and opportunities to learn from others and make new social groups (Cedefop, 2014a), (Council of the European Union; European Commission, 2015a). The signatory countries of the Bruges communiqué agreed to ensure that key competences are integrated into IVET curricula and develop appropriate means of assessment by 2020 (Council of the European Union; European Commission, 2010).

Their importance was reinforced by the Riga conclusions that sought to strengthen key competences in VET as one of five medium-term deliverables for the period of 2015-20 (Council of the European Union; European Commission, 2015a).

Embedding key competences is a complex process, involving introducing or adapting policies to improve the quality of education and to ensure that learning

and teaching continue to reflect the needs of both individuals and society at large (European Commission/EACEA/Eurydice, 2012).

Embedding key competences in VET may be even more complex, considering the diverse and heterogeneous approaches to this type of education and training in Europe. Despite the increasing attention to key competences, there are no Europe-wide analyses of their integration into IVET.

This study analyses three key competences in IVET at upper secondary level: digital, multilingual and literacy (see definitions in Annex 1. Glossary of main terms). It covers EU-27 countries, Norway and Iceland and the United Kingdom (UK) ([2]) with the reference period 2011-18 and seeks answers to the following research questions:

(a)   how have policies promoted key competences in IVET since 2011?

(b)   how are the selected key competences integrated in IVET?

(c)   to what extent has promoting key competences in VET been effective and efficient at national/EU level?

Chapter 1 and Chapter 2 of this paper set out the analytical framework and methodology of the research. Analyses of national policies and practices promoting the selected key competences are presented in:

Chapter 3: Digital competence in IVET;

Chapter 4: Multilingual competence in IVET;

Chapter 5: Literacy competence in IVET.

They can be read as separate reports. The digital and multilingual competence chapters also examine a sample of 105 individual IVET programmes allowing for more detailed analyses on how such competences are embedded in the curricula. EU priorities and national objectives supporting key competences in VET are presented in Chapter 6. Chapter 7 presents the conclusions across the key competences.

([2])   UK as part of the EU during the research phase was also included. In Belgium (German-speaking, Flemish and French Communities) and in the UK (England, Northern Ireland, Scotland and Wales), all VET subsystems were analysed separately. Hence, a total of 35 countries (VET systems) were covered.

CHAPTER 1.
Analytical framework

Answering the research questions requires conceptual clarifications in an analytical framework to ensure consistent data collection for the research tasks (^{3}). A schematic overview of the relationships between aspects of national policies and key competence inclusion in IVET is presented in Figure 1. The latter is further specified in four areas of intervention (as discussed in this chapter).

Figure 1. **Schematic overview of the relationship between national policies and key competences in IVET**
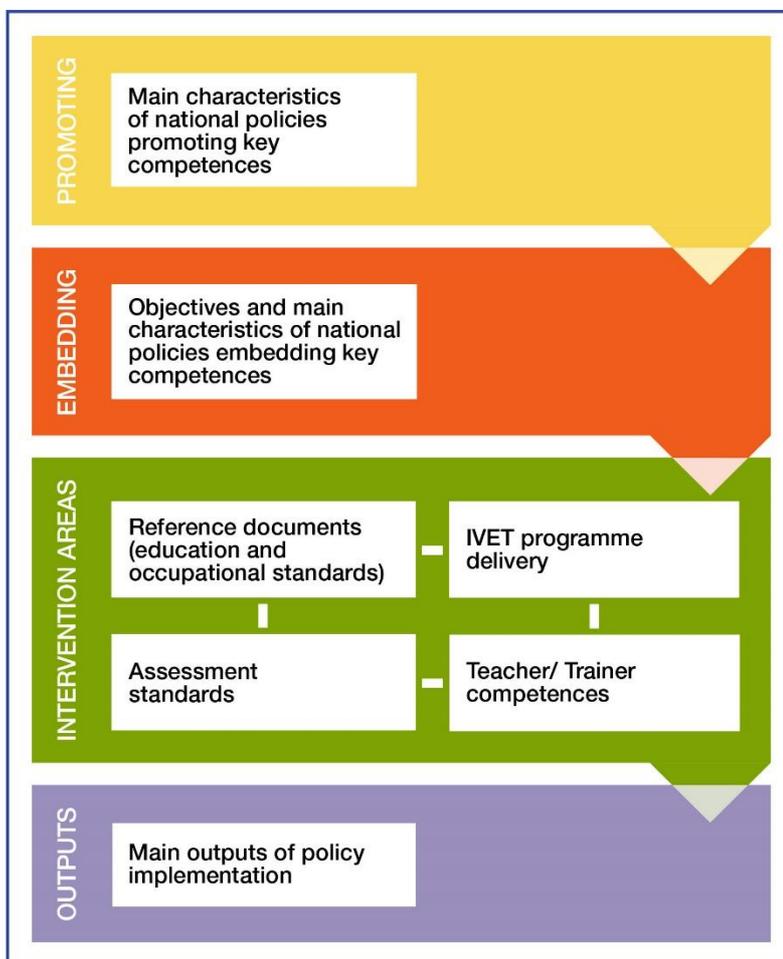
Source: Cedefop.

(^{3}) Detailed research methodology including description of the collected data is presented in Chapter 2.

Three main concepts are used in the analysis of policies supporting key competence development in IVET: promoting, embedding and including. They are described in Box 1 and discussed in this chapter.

Box 1.   **Three key concepts for discussing key competences in IVET and related policies**

In this study:

Promoting key competences in IVET means the act of mentioning and raising awareness about key competences. This is a broad category including all policies that were selected in the scope of this study. The main distinction made among policies promoting key competences is whether they have an objective to embed key competence(s) into IVET.

Embedding key competences means the activity undertaken by public policies to increase the extent to which key competences are included in IVET, through changes in reference documents, such as education and occupational standards, programme delivery, assessment standards, and teacher/trainer competences.

Inclusion of key competences in IVET means a static picture of the way that key competences are dealt with in IVET. Key competences may be included in IVET reference documents (education and occupational standards), programme delivery, teacher/trainer training and assessment standards. In contrast, 'embedding' is defined as the activity undertaken by public policies to reach a different level of inclusion.

NB: See also Annex 1. Glossary of main terms.

Key competences are also analysed from the perspective of their applicability. In VET, competences can be occupational (for example, in information and communications technology (ICT) programmes digital competences are included as a requirement for an occupation) or a key competence *stricto sensu*, not directly linked to an occupation. In this study we label the latter as 'pure' key competences. In practice the two often overlap.

1.1.   Mapping the key competences

This section sets out how inclusion of key competences in the IVET system was assessed and provides the conceptual clarification for information collection to answer the research question: How are the selected key competences included in IVET?

The relationship between VET qualifications and programmes/curricula leading to a qualification requires further explanation while analysing the inclusion of key competences in IVET:

(a) a qualification is the formal outcome (certificate, diploma or title) of an assessment procedure by a competent body to determine whether an individual has achieved learning outcomes to the standards, and/or has the competence, to work in a specific area (Cedefop, 2014c). Closely linked to the qualification is assessment of learning outcomes. This is the process of appraising an individual's knowledge, know-how, skills and/or competences against predefined criteria, such as learning expectations and measurement of learning outcomes. Assessment is followed by certification (Cedefop, 2014c), and meets different functions and has different purposes. A distinction is made between assessment for summative and for formative purposes. As explained in a Cedefop study on curriculum reform in Europe (Cedefop, 2012), summative assessments concern a learner's attainment of specific knowledge, skills and/or competences at a particular time. Formative assessment is 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;

(b) a programme leading to a qualification is defined as an inventory of activities, content and/or methods implemented to achieve education or training objectives (acquiring knowledge, skills and/or competences), organised in a logical sequence over a specified period of time (Cedefop, 2014c);

(c) another key term to define is curriculum. This is closely related to that of a programme leading to a qualification and these terms are used synonymously in this study. Curriculum is defined as an inventory of activities related to the design, organisation, and planning of an education or training action, including definition of learning objectives, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers (Cedefop, 2014c). Different programmes or curricula, and different learning pathways (routes for acquiring the stated learning outcomes) can lead to the same qualifications.

The qualifications, assessment standards, programmes (curricula) are informed by a reference document that sets out the intended learning outcomes of the qualification. Countries use different reference documents and instruments to define and describe intended learning outcomes. These reference documents can have different functions, ranging from expressing a close relationship to the labour market to making a closer link to education delivery. A document that includes learning outcome descriptions may have different functions, such as education

standard and curriculum (Cedefop, 2018, unpublished). The Cedefop study on
IVET qualifications at European qualifications framework (EQF) levels 3 and 4
shows that they 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 ([4]) analysed (Cedefop, 2020).

The links between reference documents, programmes, assessment standards
and qualifications are presented in Figure 2.

Figure 2.   **Links between reference documents, programmes, assessment
standards and qualifications**
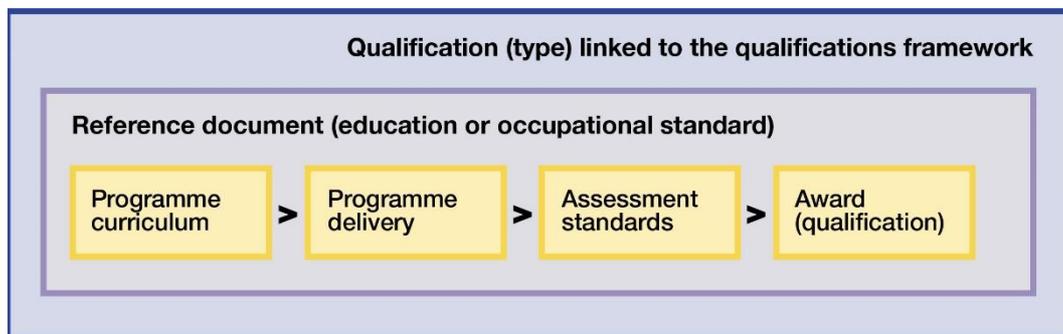
Source: Adapted from Cedefop, 2020.

In this study, four main areas of intervention (supporting key competence
development) have been defined:

(a) reference documents (education and occupational standards);

(b) programme delivery;

(c) teacher/trainer competences;

(d) assessment standards.

Analysing how each of the three key competences is included in each area
enables detailed assessment of the overall inclusion of these competences in
IVET.

([4]) Qualification type refers to a group or cluster of qualifications within a country that
share specific characteristics, for example by the subsystem they belong to, legal
regulations and regulatory body, purpose, general educational objectives as well as
duration of related programmes, access requirements or level of labour market entry.
Within a qualification type, there can be many different qualifications with regard to
content: the specific learning outcomes they include can be quite different because
they are linked to different fields (such as different technical fields, social and health
care, business) (Cedefop, 2014b). Usually, the qualification type is linked to certain
levels of the national and European qualifications frameworks.

1.1.1. Reference documents (education and occupational standards)

The learning outcomes approach is being implemented in the education systems of Europe. Policy-makers have been actively introducing policies defining new qualifications and curricula, and activating support mechanisms to promote the use of learning outcomes approaches in some or all subsystems of education. The shift to outcomes-based teaching and learning has become visible in an increasing number of education and training institutions (Cedefop, 2016).

The starting point for studying how key competences are embedded in IVET is to identify the learning outcomes described for the qualifications. Where this approach is not yet being applied, other statements on the content of learning and the education objectives given in the reference documents were considered.

Learning outcomes are defined as a set of knowledge, skills and/or competences that an individual has acquired and/or is able to demonstrate after completion of a learning process, formal, non-formal or informal (Cedefop, 2014c). Another definition is statements of what a learner knows, understands and can do on completion of a learning process, defined by knowledge, skills and competence ([5]).

Countries have reference documents that include descriptions of learning outcomes and/or education objectives. While the functions of these documents may differ, their common purpose is to describe what a graduate should know, understand, and be able to do on completion of a learning process. These descriptions inform the programmes (curricula) leading to the qualifications and assessment standards.

The types of documents in which the learning outcomes and education objectives for qualifications are described are categorised as follows (Cedefop, 2009):

(a) occupational standards describe the activities and tasks for a specific job and the competences required for that occupation. Occupational standards set out what a student need to be able to do in employment;

(b) education standards may define the expected outcomes of the learning process leading to a qualification, the study programme by content, learning objectives and timetable, entry requirements and the resources to attain the learning objectives and teaching methods and learning settings, such as in-company or school-based learning. Education standards set out what the student needs to learn to be effective in employment and society.

As seen in reference documents, digital, multilingual and literacy competences can be included in learning outcomes in different ways. How the

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([5]) Both definitions are given in the Cedefop glossary (Cedefop, 2008).

learning outcomes are structured, for instance as a stand-alone unit, or integrated into broader transversal, or occupation-specific learning outcomes, will influence the extent to which the three competences are included in IVET.

1.1.2. Programme delivery

The selected key competences (literacy, multilingual and digital) can be included in programmes / curricula as a stand-alone subject/module; integrated in other subjects/modules; or not included at all. How the three selected key competences are included in the programmes leading to the qualification may not necessarily be the same as how they are integrated in the reference documents.

How key competences are included in IVET programmes / curricula also relates to the delivery mode of the programme. Programmes can be provided by public providers, companies or both, and the learning venue can be a school, a workplace, or both. Programme delivery also affects how the three key competences are acquired. This could be mainly in a school-based or classroom-based setting, or in the workplace. Finally, the weight given to these key competences in terms of time and modules will have an impact on how well they are integrated.

How the three competences are incorporated in the programme, and how the programme delivery affects the relationship between the three key competences and the other learning outcomes in a qualification, is also important. For instance, are these key competences foundational for acquiring other learning outcomes or are they non-foundational for acquiring other learning outcomes (such as an add-on in the programme or even as an elective module)?

1.1.3. Revision of assessment standards

To obtain a qualification as proof that a student has achieved the learning outcomes, an assessment is conducted. Assessment has a crucial impact on whether and how learning is delivered (Black and William, 1998), so these topics need to be explored in depth to determine how each of the three key competences are included in IVET programme assessments. However, qualification award can be organised differently in countries and in qualification types. For instance, it can be based on a final assessment or a certification examination at the end of a training programme, or on the accumulation of parts of the qualification – modules, units, credits – without a final assessment. Various methods can be used in a final assessment, such as written, oral and/or practical examinations.

The form of the assessment for the three key competences 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.

1.1.4. Competences of teachers and trainers

To include literacy, multilingual and digital competences in IVET programmes and assessment, IVET teachers and trainers require certain competences. This requirement is closely related to how the key competences are included in IVET programmes, as separate modules or integrated with other subjects.

Another factor is whether the key competences are taught only by teachers in school-based learning environments, or whether in-company trainers are also involved.

Teachers and, to a lesser extent, company trainers can obtain literacy, multilingual and digital competences at three stages (European Commission, 2017a):

(a) initial training;

(b) early career years / induction period;

(c) continuing professional development (CPD).

1.2. Policies supporting key competence development

This section sets out the conceptual clarifications required to collect information to answer the following research question: how have policies promoted key competences in IVET since 2011?

The main characteristics of national policies promoting key competences in IVET analysed in this study are presented in this section. Policies promoting key competences in IVET address all eight key competences or a bundle of them. We chose to examine policies that specifically promote three key competences. These policies, implemented during 2011-18 ([6]), took different forms/types ([7]):

(a) strategies setting visions, goals, and directions for IVET development for a long-term period. Key competences can be stated in these strategies. While not necessarily linked to a legislative act, strategies could involve stimulating VET providers to work on embedding key competences in IVET provision;

(b) legislative act(s) setting the governance systems, responsibilities and defining IVET, usually with indefinite duration: key competences can be mentioned in the main legal frameworks governing IVET. During 2011-18, amendments to the main legislative acts may have been adopted to stimulate the embedding of key competences in IVET;

([6]) Cut-off date 2015: to enable assessment of policy implementation in the period 2016-18.

([7]) Adjusted from: European Commission and ECORYS, 2019.

(c) implementing act(s) setting concrete actions, budget, targets, and guiding the implementation of IVET policy. Changes to main legislative acts and new legislative acts can be accompanied by implementing acts that set out more concretely what needs to be done. In some cases, no changes are adopted in the main legislative act, but changes are made to the IVET system, such as better embedding of key competences regulated through implementing acts;

(d) other national/regional level documents include policy documents, such as action plans and guidelines, to stimulate and support embedding key competences in IVET;

(e) other sectoral/VET provider level documents include support documents drafted, for instance, by VET associations or VET providers.

These policy forms/types differ in their scope and the extent of their impact. For example, a strategy that provides a general statement of direction may not necessarily have a direct impact on embedding key competences in IVET. Literacy, multilingual, and digital competences may be referred to explicitly in policy statements, or such statements may be implicit or incorporated into broader policy statements. While the selected policies all promote key competences in IVET, they seek to do so in a variety of ways. This study distinguishes between policies that do so with or without an objective to embed key competence(s) into IVET.

1.3. Achieving policy objectives

The study aims to examine policies in relation to how literacy, multilingual and digital competences are included in the four areas of intervention. It also aims to define objectives of the policies and, more important, whether these objectives have been achieved.

Policies do not always result in better inclusion of the key competences. Where policy implementation does not do so, much can be learned for future policy development, design and implementation ([8]).

([8]) Policy failure is regarded more as a social construct than something that can be verified empirically. As McConnell (McConnell, 2014) argues, policy failure has multiple dimensions. Usually, policy does not fail completely but succeeds in some respects. Failure also depends on the perspective of the stakeholder making the assessment, and on the interpretations of different groups concerned with a policy. For example, a government may consider a policy to be successful, whereas the opposition considers that same policy to have failed (McConnel, 2010). May (May, 1992) described this even more strongly, stating that the objective reality of policy failure is less important than a perception of policy failure. This statement can be reinforced by indicating that the assessment of success and failure of particular

Policies may not achieve their objectives for various reasons (McConnell, 2014):

(a) policy is not able to meet original objectives;

(b) policy is not implemented as intended;

(c) policy does not benefit the intended target group;

(d) policy is not able to meet criteria highly valued in that policy sector.

Lane and Hamann (2003) put forward other reasons for failure of education policies:

(a) form and content: education policy must be designed to be coherent, justifiable, legitimate, and integrated;

(b) policy communication: the communication of policy is an often overlooked yet important dimension of policy formation and implementation;

(c) policy implementation capacities: a critical, and missing, element in the current policy implementation literature is discussion of the capacities and skills needed by education leaders who play the roles of policy intermediaries. Table 1 summarises policy challenges based on challenge areas and policy cycles.

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policies or programmes is in the end a political judgment: '[...] these political evaluations do not necessarily square with the actual performance of a programme or policy' (Bovens et al., 2001). Following this line of thought, Walsh (Walsh, 2006) defines policy failure as occurring when responsible decision-makers conclude that policies no longer achieve the political and programme goals they prefer. According to McConnell (McConnell, 2014), there are always several shades of grey between success and failure, and most often there is not one single cause for failure, but multiple causes. Hence, an analysis of failure must always be sensitive to different understandings and viewpoints of failure.

Table 1.   **Policy challenges**

Area of challenge / Policy cycle	Context	Stakeholder ([9]) engagement, commitment and ownership	Coordination, management and political priority	Resources
Policy preparation and development	• Lack of quality data and analysis • Lack of understanding of the problem the policy is supposed to have solved • Policy not well aligned with other policies	• Key stakeholders not involved in policy design and development; lack of ownership	• Lack of effective coordination of key stakeholders	• Lack of capacities on the topic in policy design and development
Policy implementation (planning and conducting activities)	• Context appeared to be more challenging than expected • Context changed while implementing	• Key stakeholders are not (sufficiently) involved in the policy implementation • The policy does not provide incentives for key stakeholders to implement the policy • Lack of communication to inform and involve stakeholders	• Reduced political will and priority • Lack of effective coordination of implementation activities	• Lack of capacities built among stakeholders to implement the policy • Lack of financial resources
Policy monitoring and follow-up	• No monitoring system in place to make changes to the policy and implementation • No feedback loops between key stakeholders in the policy implementation			

Source: Adapted from McConnell, 2014 and Lane and Hamann, 2003.

A policy that faced challenges means that at least one of the policy objectives has not been achieved, at least not initially, and that the key competence targeted has not been embedded in IVET as was envisaged.

([9])   Stakeholders such as ministries, authorities, VET colleges associations and employer associations can be directly involved in policy design, development and implementation. They can also be indirectly involved and carry out the policies, as with school heads, teachers, students and employers.

CHAPTER 2.
Research methodology

2.1. Inventory and analysis of national policies promoting key competences in IVET

Policies promoting literacy, multilingual and digital competences in IVET were identified in 34 VET systems ([10]), with Luxembourg the only exception.

To collect the data, country experts conducted desk research, reviewed the literature and conducted 58 interviews to compile and validate the information collected at national level.

Box 2. **Policies: description of data gathered**

> The study identified 79 policies targeting literacy, multilingual and/or digital competences that were adopted between 2011 and 2018. Some policies targeted one specific key competence while others had a wider scope covering up to all key competences. Of the 79 policies, 53 were on literacy, 41 multilingual, and 64 on digital competence.

2.2. Integration of literacy, multilingual and digital competence in IVET

Key competence integration in IVET was investigated at qualification type level (EQF levels 3, 4 and 5) and in three programmes in each of the 35 VET systems.

2.2.1. Key competences in IVET by qualification type

Data on qualification types were collected by means of a research template and included:

(a) general approach to embedding literacy, multilingual and digital competences;
(b) assessment of how the three selected competences are embedded in learning outcomes described in reference documents for the qualification type;
(c) how the three key competences are embedded in the delivery of programmes/curricula for the qualification type;

([10]) Four systems in the UK, three systems in Belgium and one system in other countries.

(d) assessment standards for the three key competences in the qualification types.

These data were collected by country experts through desk research, and at least one expert interview was conducted to fill informatfion gaps and to validate the data obtained.

Box 3. **Qualification types: description of data gathered**

A total of 78 qualification types were identified as follows:
- one at EQF level 2;
- 23 at EQF level 3;
- 34 at EQF level 4;
- six at EQF level 5;
- 10 qualification types at different EQF levels, mostly referenced to both levels 3 and 4;
- four qualification types that are not yet referenced to the EQF.

Most of qualifications clustered in these qualification types are predominantly delivered in full-time mode (77), but some (13) also allow part-time studies for obtaining the IVET qualification. Qualification types do not prescribe explicitly where the education and training is taking place. While distance and personalised learning are, in theory, offered at the discretion of the VET provider, this type of training is not yet offered in practice. The duration of the programmes ranges from one to four years and a half.

2.2.2. Key competences in IVET at individual programme level

To facilitate comparison of three programmes per VET system, three sectors were selected based on the following assumptions:

(a) high probability of the availability of qualifications and programmes/curricula at EQF levels 3, 4 or 5 in all countries;

(b) high probability of the availability of work-based or in-company training in all EU-28+ countries;

(c) high probability that IVET programmes can be identified in which multilingual and digital competences are either directly linked to a qualification (as vocational requirement) or are part of the curricula but not necessarily required for professional practice, and thus can be considered pure key competences.

Based on these assumptions, the following sectors were selected:

(a) accommodation and food service sector (NACE ([11]), Section I);

(b) manufacturing sector (NACE, Section C);

([11]) *Nomenclature statistique des activités économiques dans la Communauté Européenne* (NACE).

(c) construction sector (NACE, Code F).

To improve comparability of programmes, three qualifications were selected for further investigation. These are waiter/waitress in the accommodation and food service sector; welder in the manufacturing sector; and bricklayer in the construction sector. Where programmes leading to these qualifications were not available, similar qualifications were selected.

The following data were collected on individual programmes:

(a) general information on the VET programme (including type of programme delivery; recent developments in embedding key competences);

(b) information on how multilingual and digital competences are embedded in the four areas (reference documents, programmes/curricula, assessment standards and teacher/trainer competences);

(c) assessment of whether multilingual and digital competences are perceived as 'pure' key competences or occupation-specific competences that are required for the job-specific practice.

Data were collected by experts in desk research and validated by one focus group per programme and/or in three individual interviews when a focus group could not be organised. In total, 39 focus groups were conducted with 133 participants ([12]). In addition, 259 individual interviews were conducted where focus groups could not be organised to validate the information gathered ([13]).

([12]) For some programmes, two focus groups were organised.

([13]) In some countries, the same people could provide information for all three programmes and thus were counted as interviews/focus group participants for more than one programme.

Box 4. **Individual programmes: description of data gathered**

In total, 105 programmes covering different EQF levels in the EU+ countries were investigated, including 35 in each of the three sectors identified: accommodation and food service, manufacturing, and construction.

Half of the programmes were at EQF level 4 (50%), 30% at EQF level 3, and 10% at both EQF level 3 and 4 ([14]). Only 3% of programmes were at EQF level 5, one (1%) at EQF level 2, and 6% are not referenced to the EQF ([15]). As shown in Figure 3, in the accommodation and food service sector, most programmes (60%) are at EQF level 4 compared to 46% in the construction and the manufacturing sectors.

Figure 3. **Distribution of programmes per sector and EQF level**
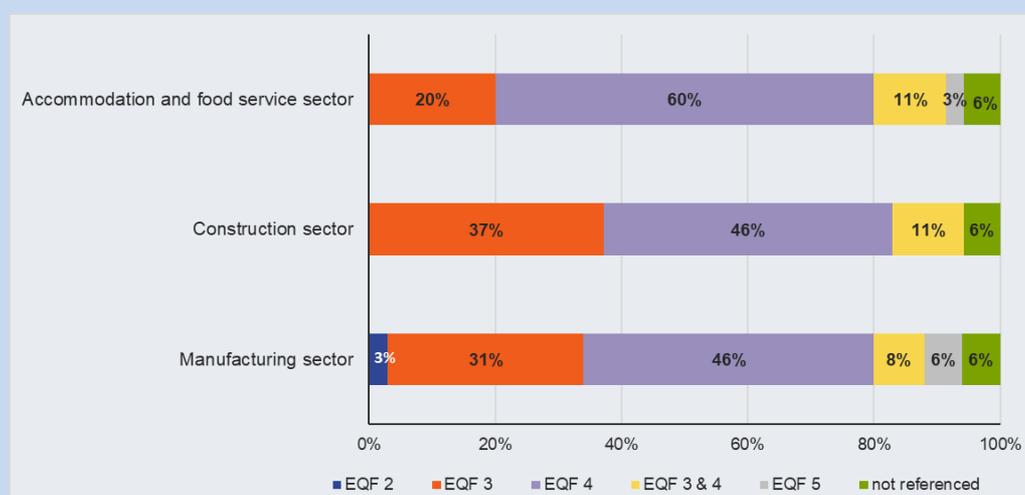
NB: N =105 programmes.
Source: Cedefop.

More than half of the programmes investigated (58%) were school-based but included some type of work-based learning (such as in school workshops/ laboratories or limited work-based learning in a company). Approximately 20% of programmes were work-based with limited school-based learning, and 23% were

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([14]) This was the case for the programmes leading to the three selected qualifications in UK-England, UK-Northern Ireland (except the programme leading to the welder qualification), UK-Scotland and UK-Wales. This is due to the qualification structure in UK where most qualifications are at lower and higher EQF levels.

([15]) This concerns the three programmes in Spain and in the French Community of Belgium. Five of these programmes are at ISCED level 3 and one at ISCED level 5 (Higher Technician in Metallic Constructions in Spain).

both school-based and work-based ([16]). This differentiation was not applicable to the three programmes investigated in Norway ([17]).

The distribution per sector was similar: more than half (59%) of the programmes are school-based in the accommodation and food service sector, 56% in the construction sector, and 59% in the manufacturing sector. In the manufacturing and accommodation and food service sectors, 24% of programmes are a combination of school- and work-based approaches compared to 21% in the construction sector. In this sector, slightly more programmes are work-based (24%) compared to 18% each in the manufacturing and accommodation and food service sectors (n=102 programmes, three programmes not applicable).

2.3. Effectiveness and efficiency of policies

In this research phase, country experts were asked to assess the effectiveness and efficiency of national policies to promote the three selected key competences (literacy, multilingual and digital competences) in IVET. Links were identified between the objectives of EU policies and those of national policies and their implementation.

Data were collected using a research template that builds on the information collected in previous tasks. Experts assessed policy implementation (to what extent actions and activities were carried out) and explored the impact of these actions on the extent to which the respective key competences are embedded in IVET.

For this task, the country experts conducted additional desk research for each policy and interviews with high-level policy-makers and other stakeholders to gain information on the effectiveness and efficiency of policies. In total, 196 expert interviews were conducted and analysed for this task.

2.4. Case studies

Case studies were done on eight national policies (maximum one per country) that were designed to promote key competences in IVET but faced challenges in achieving their objectives or in policy implementation. The main criteria for selecting the case studies were:

([16]) N=102, three programmes not applicable. Due to rounding up from two decimal points the sum exceeds 100%.

([17]) The Norwegian 2+2-model with two years of primarily school-based learning followed by two years apprenticeship does not fit these categories. In the first two years, most students do practical work in workplaces and thus have a little more workplace training than school-based education.

(a) policies that promoted one of the three key competences, but did not promote many other key competences (policies focusing on more than four key competences were excluded from selection);

(b) policies facing implementation challenges in at least one intervention area as specified in the analytical framework;

(c) challenges in policy implementation were not solely related to budgetary constraints.

These criteria were used to select eight case studies: four analysed policies targeting digital competence, two targeted literacy competence and two multilingual competence. The case studies were conducted on policies in the Flemish Community of Belgium, Germany, Hungary, Ireland, Iceland, Latvia, the Netherlands and Romania. In total 26 interviews were conducted and analysed for drafting the case studies.

Each case study was structured to consider the following issues:

(a) policy objectives related to implementation of the key competence in IVET;

(b) main activity/policy actions addressing the objective(s);

(c) governance levels and stakeholders involved;

(d) areas of difficulty in implementing the key competence, or no implementation;

(e) reason(s) for failure;

(f) strategies for dealing with the difficulties;

(g) end result.

While case studies are not included in this research paper, initial results on challenges identified in them are included in Section 7.2.2.

CHAPTER 3.
Digital competence in IVET

The 21st century is characterised by a constantly changing technology- and media-driven environment, in which an ever-growing wealth of information is available. In this interconnected society, digital competence is essential for active participation.

Since the publication of the 2006 recommendation on key competences for lifelong learning, European policy and support measures have highlighted digital competence as a priority in major strategies and targeted initiatives. For instance, the Strategic framework for education and training (ET 2020) identified use of new ICT tools and teacher training as priority areas for development (Council of the European Union; European Commission, 2015b).

The need for digital upskilling is addressed in education-focused policies, such as:

(a) Rethinking education ([18]);
(b) *New skills agenda for Europe* (European Commission, 2016);
(c) Opening education ([19]);
(d) The Digital Skills and Jobs Coalition ([20]),
(e) more labour-market orientated policy initiatives such as *A new boost for jobs, growth and investment* ([21]) and *Digital single market* ([22]).

Digital literacy and skills are promoted in the initiative, Digital agenda for Europe (European Commission, 2014a). Recently, the Digital education action plan was presented that includes three priorities related to digital competence:

(a) making better use of digital technology for teaching and learning;
(b) developing digital skills and competences relevant for the digital transformation;

([18]) http://ec.europa.eu/education/policy/multilingualism/rethinking-education_en [accessed 12.4.2018].

([19]) https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/opening-education-support-framework-higher-education-institutions [accessed 12.4.2018].

([20]) https://ec.europa.eu/digital-single-market/en/digital-skills-jobs-coalition [accessed 12.4.2018].

([21]) http://www.europarl.europa.eu/legislative-train/theme-new-boost-for-jobs-growth-and-investment/fiche [accessed 12.4.2018].

([22]) https://ec.europa.eu/digital-single-market/en/policies/shaping-digital-single-market [accessed 12.4.2018].

(c) improving education through better data analysis and foresight (European Commission, 2018b).

The 2018 Council recommendation on key competences for lifelong learning defines digital competence as the 'confident, critical and responsible use of, and engagement with digital technologies for learning at work, and for participation in society. It includes information and data literacy, communication and collaboration, digital content creation (including programming), safety (including digital well-being and competences related to cyber security), and problem solving' (European Commission, 2018a).

According to the digital competence framework (DigComp) 2.1, digital competence consists of five key components with eight proficiency levels (ranging from basic generic skills to higher-order skills and specialist skills):

(a) information and data literacy: browsing, searching, filtering, evaluating and managing data, information, and digital content;

(b) communication and collaboration: interacting and sharing through digital technologies, engaging in citizenship through digital technologies, collaborating through digital technologies, netiquette, and managing digital identity;

(c) digital content creation: developing, integrating and re-elaborating digital content, copyright and licences, programming;

(d) safety: protecting devices, personal data and privacy, health and well-being as well as the environment;

(e) problem-solving: solving technical problems, identifying needs and technological responses, creatively using digital technologies, identifying digital competence gaps (European Commission, 2017b).

3.1. National policy

Key messages:
- Between 2011 and 2018, all but one of the EU+ countries adopted and started implementing policies that promoted digital competence in IVET; there were 64 policies in total. These policies differ, ranging from those focusing exclusively on IVET and digital competence to policies that cover the whole education sector and multiple key competences. 13 policies exclusively focused on digital competence.
- Most (39 of 64) policies that promoted digital competence in IVET were strategies, generally having an agenda-setting purpose and presenting longer-term visions rather than short-term, practical implementation plans.

- While the policies promote digital competence in IVET, this is done in combination with addressing other broader societal objectives. One-third of all such policies have employability as the main societal objective, and one-fifth have social inclusion and lifelong learning as the main societal objective.

- In the reference period (2011-18), most policies were adopted in 2014 (16 policies). This peak in 2014 was the result of the adoption of many strategies with the timeframe 2014-20 and is also linked to the EU policy planning schedule (2007-13; 2014-20).

- Almost half (44%) of the 64 policies refer to EU or international initiatives, such as European digital agenda; e-competence; DigCompOrg; European computer driving licence; recommendation on key competences for lifelong learning. References to EU initiatives set the scene or have a direct effect on policy content.

- Most policies (66%) adopted in 2011-15 have successfully completed the anticipated activities. More recent policies (2016-18) were more often still in an implementation phase (39% completed) but may already have contributed with partial results. Policies that did not complete the activities as planned were rare (2% until 2015, 4% thereafter).

- Of the 64 policies, 37 seek to embed digital competence through programme delivery, 23 focus on reference documents, 28 on teacher training, and 19 on revising assessment standards. This shows how, in practice, most policies combine at least one or more of these areas in a single policy. A total of 21 policies mention digital competence in IVET but do not focus on embedding digital competence into IVET (they undertake an activity to reach a different level of inclusion). Policies often approach the embedding of digital competence into IVET through multiple areas, addressing a combination of reference documents, programme delivery, assessment and teacher training at once. This underlines the importance of integrated policies that target embedding digital competence in IVET from multiple directions.

3.1.1. National policies promoting digital competence in IVET

The study identified 79 national policies that promote literacy, multilingual and/or digital competence in IVET, as shown in Figure 4.

Figure 4.   **National policies promoting literacy, multilingual and digital
            competences: focus on digital competence**

In total: 79 policies identified
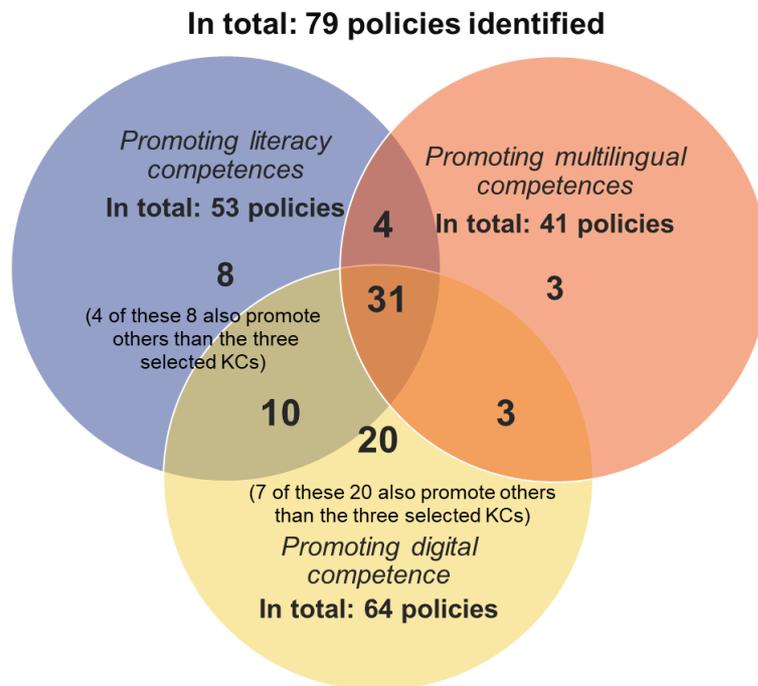
NB: N=79.
Source: Cedefop.

Figure 4 shows how many policies promote each of the three studied key
competences, and how many of these overlap. In 2011-18, a total of 64 national
policies were initiated and implemented promoting digital competence in IVET.
Policies often targeted multiple key competences, with a total of 31 policies
promoting all three studied key competences at once. For the purpose of
presentation, the figure does not describe additional key competences that these
policies mention (cultural awareness and expression, personal social and learning
to learn, mathematical competence and competence in science, technology and
engineering, citizenship, and entrepreneurship), but such overlaps are equally
common ([23]). A closer look at these 64 policies targeting digital competence further
reveals their diversity, for instance in terms of scope, coverage and objectives.

The scope of what key competences policies promote varies substantially.
Many promote multiple key competences and 20 policies concentrate on digital
competence without promoting literacy and multilingual competences. Among

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([23]) For instance, among the 31 policies that address all three key competences under
        study, 22 address all eight key competences.

these 20 policies, 13 exclusively promote digital competence ([24]). Though a minority, there are considerably more policies that exclusively promote digital competence than policies that exclusively promote other key competences. This illustrates the specific nature of digital competence and the policies promoting it in IVET.

Some policies were designed exclusively for IVET while others address the entire education sector, without mentioning IVET specifically. The latter category of policies is equally relevant to this study, as these may equally result in changes to how key competences are perceived, taught and assessed in IVET.

The objectives of the policies vary substantially. While the selected policies all promote key competences in IVET, they seek to do so in a variety of ways. The main distinction made among policies promoting key competences is whether they have an objective to embed key competence(s) into IVET. Some policies are mostly focused on raising national awareness of the importance of digital competences, or more specifically increasing the attention given by the general public, students or education providers to it; other policies have the explicit objective of embedding digital competences better in IVET. Embedding is defined as the objective of having a visible effect on IVET, either through changes in reference documents ([25]), programme delivery, assessment standards, or teacher/trainer competences. These key characteristics in which the selected policies vary are summarised in Figure 5.

([24]) The remaining seven policies address digital competence with a combination of additional key competences beyond the scope of this study (cultural awareness and expression, personal social and learning to learn, mathematical competence and competence in science, technology and engineering, citizenship, and entrepreneurship).

([25]) Reference documents are the generic term for educational and occupational standards, including the descriptions of learning outcomes and/or educational objectives.

Figure 5.   **Key characteristics of policies promoting digital competence**
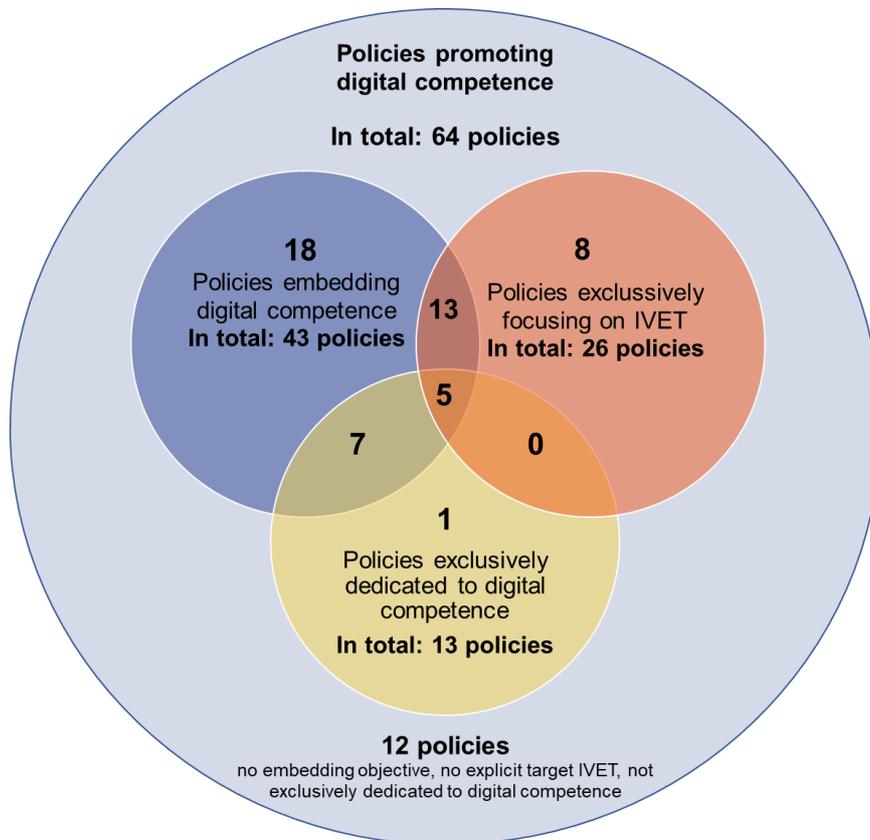
NB: N=64; all policies that focus on digital competence.
Source: Cedefop.

Of the 64 policies, 26 exclusively focus on IVET. These mostly target the entire secondary education sector (including IVET) and may even cover the higher education sector or pre-school and primary education sectors. For instance, the National digital competences initiative e2030 in Portugal (2018) seeks to enhance such competences in Portuguese society. Education is one of the five dimensions (action lines) addressed by this policy but only in a general sense. The policy includes attention to reviewing programme contents and teaching processes, developing digital didactic and educational resources, promoting teachers' pre-service and in-service training, and ensuring lifelong training; however, it does not define a specific education sector. It does not specifically target IVET, and addresses IVET as much as school education and higher education.

Most of these policies (51 of 64) target multiple key competences, with 13 that are exclusively dedicated to digital competence. For instance, the Finnish vocational upper secondary education and training Act adopts a broad view of key competences, including references to all eight.

A total of 43 policies defined an objective to embed digital competence into IVET. The remaining 21 mention digital competence, without defining concrete objectives that visibly impact the way key competences are included in IVET. These set broad objectives, beyond the scope of embedding key competences, and can include policies that define broad lifelong learning strategies or consist of broader VET reforms [26]. While these policies refer to key competences, they do not specify concrete actions that change the way competences are included in IVET. Examples for each of these two different types of policy (embedding and not embedding) are presented in the boxes below.

Box 5. **Policies embedding digital competence**

National digitalisation strategy for the education system (Sweden)

The policy aims for better embedding of digital competence in all levels in the Swedish school system. The policy stresses that 'All children and students need an understanding of how digitalisation affects the world and our lives, how programming controls both information flows and the tools we use, as well as knowledge of how the technology works to be able to apply it.' The strategy contains three different focus areas: digital competence for everyone in the school system; equal access and usage; research and monitoring regarding the possibilities of digitalisation. A platform for teachers' further training is already in place. However, due to the strategy, new modules for digital training of teachers are being developed.

Strategy for effective implementation of ICT in education and science 2014-20 (Bulgaria)

The strategy introduces an action plan that seeks to increase the interest and motivation of pupils in the process of learning through the use of innovative methods based on ICT, and to encourage interactive learning and critical thinking of pupils. To do so, it embeds digital competences in IVET, mainly at the level of programme delivery, assessment and teacher training. The strategy and the accompanying action plan are implemented by education providers including vocational schools. Material and personnel resources for schools, as well as access to funding (from the State budget or EU shared financing of projects) play an important role in this respect.

Source: Cedefop.

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[26] For example, a broad IVET reform policy that restructures the way in which learning outcomes are defined. Because of such a policy, learning outcomes that describe key competences will also be affected, just like any other learning outcome. If the policy did not define specific actions for key competences (that set it apart from other types of learning outcomes), a policy is not considered to be explicitly embedding digital competences. In these cases, any changes to key competences in IVET are an indirect effect of the larger anticipated change and are not an explicit policy to revise embedding of digital competences in IVET. Also refer to the analytical framework (Chapter 1), where this distinction is further defined.

Box 6.   **Policies not embedding digital competence**

Austrian lifelong learning strategy (Austria)

The strategy contains 10 lines of action, each aiming to acquire, deepen and further develop the eight key competences (including digital competence) in an integrative process and to support the learner in a wide range of learning contexts, so that they will be able to acquire key competences according to their individual needs. Though key competences are mentioned in the strategy, these are considered transversal elements that influence all strategy actions. No concrete measurable initiatives or strategic objectives were developed in connection with any of the key competences. The annual monitoring reports do not measure progress for individual key competences.

Royal Decree 1147/2011: General order of the VET system of the education system (Spain)

The decree establishes the general legal framework of Spanish IVET, and implicitly refers to key competences (including digital competence). However, the decree does not define how these key competences are to be embedded into IVET; it only defines the key competences that a student must know prior to enrolling in VET. This is defined in an annex to the decree, which specifies that digital competence and communication (which includes literacy and languages) are basic competences taken as a reference to be able to access medium and high-level VET degrees. No further attention is paid in the decree to how IVET then consolidates these key competences.

Source: Cedefop.

The analytical framework (Chapter 1) indicates that there are different types of policies, such as legislative acts, strategies, implementing acts, and other national/regional level documents (such as guidance documents). An overview of policy types that promote digital competence in IVET is presented in Figure 6.

Figure 6.   **Types of policies that promote digital competence in IVET**
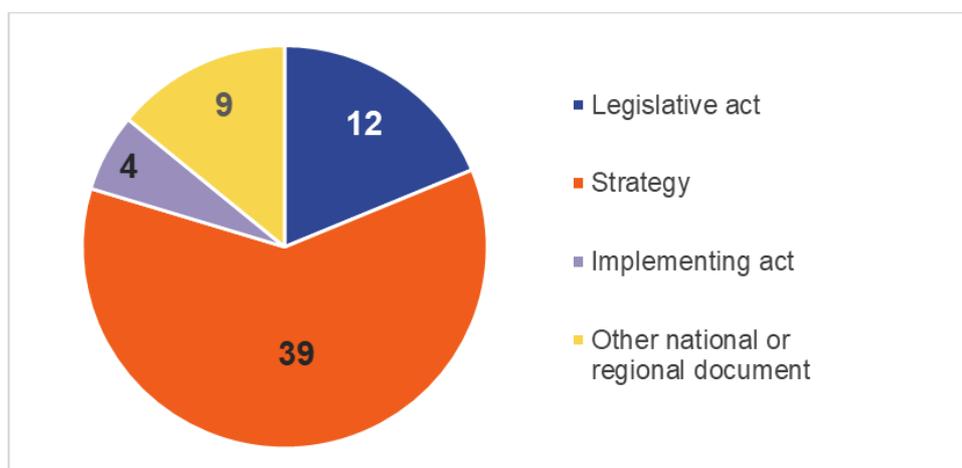
NB: N=64.
Source: Cedefop.

Most policies are characterised as a strategy. Compared to legislative acts and implementing acts, strategies generally have an agenda-setting purpose and present longer-term visions instead of short-term, practical implementation plans. This affects how objectives are phrased, as well as the results envisaged from the implementation.

Box 7.   **Example of a strategy promoting digital competence in IVET**

The strategy for the digital vocational education from 2015 (Denmark)
This strategy derives from the 2014 VET reform. It focuses on how digital technologies can support VET schools to use digitisation in teaching to raise the quality of teaching and VET. The strategy does not directly focus on digital skills as a key competence but rather on digital tools and their application in education and teacher competence. However, the rationale is that using digital media in teaching will improve the digital competence of the students.

Source: Cedefop.

Most policies promote digital competence in IVET from a broader societal perspective, such as employability, citizenship, social inclusion, and support to lifelong learning. The main societal objectives attached to the 64 policies are presented in Figure 7.

Figure 7.   **Policies promoting digital competence by main societal objective**
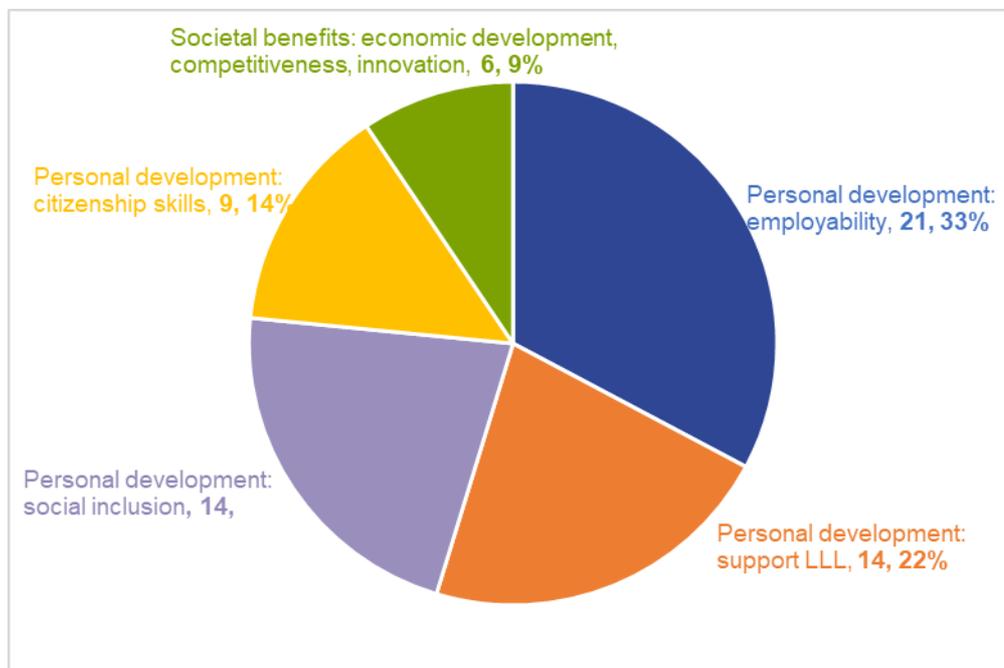
NB: N=64; all policies that focus on digital competence.
Source: Cedefop.

Most policies that promote digital competence do so from the perspective of individual benefits:

(a) to increase employability prospects (33%);
(b) to increase learner engagement in lifelong learning (22%);
(c) for social inclusion (22%).

Citizenship skills, including the capacity to participate in modern-day democracies, are other overarching objectives that underpin the logic of nine policies promoting digital competence (14%). Six of the 64 policies (9%) do not define overall objectives for individuals but limit them to set objectives at an overarching level, using increase in digital competence to contribute to economic development, competitiveness and innovation.

3.1.2. Year of policy adoption and EU references

An overview of policies that address digital competence in IVET by year of adoption is presented in Figure 8. A distinction is made between the number of policies that promote digital competence in total (blue line) and policies that have an explicit focus on embedding digital competence (43 policies: orange line).

Figure 8. **Number of policies that promote digital competence in IVET by year of adoption**
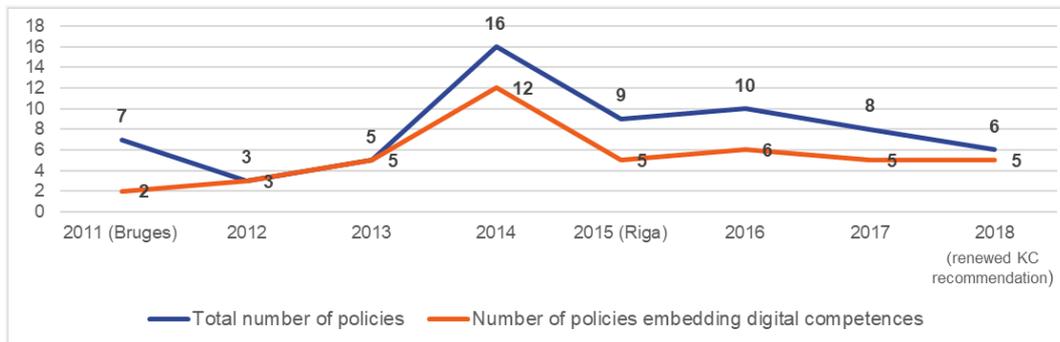
NB: N=64.
Source: Cedefop.

In the reference period (2011-18), most policies were adopted in 2014 (16 policies), followed by 2015 and 2016. In 2012, only three policies were adopted. The number of policies with an explicit focus on embedding digital competences varies over time. The peak in number of policies and the increase in specific/focused policies in 2014 was the result of adoption of many policies with the 2014-20 timeframe and is also linked to the EU policy planning schedule (2007-13; 2014-20). Examples include:

(a) strategy of the Slovak Republic for youth for 2014-20;
(b) Cyprus national strategy for lifelong learning 2014-20.

While the Riga conclusions have inspired countries to promote policies supporting digital competences in VET, the variation in policies over the years makes it difficult to draw conclusions about their direct impact. Of the 64 policies, 28 (44%) refer to EU or international initiatives. Reference to digital competence is found in the EU 2020 strategy, European digital agenda; e-competence, DigCompOrg, the European computer driving licence, and the Council recommendation on key competences for lifelong learning. Reference is made to the European network of public employment services and the European lifelong guidance policy network (ELGPN) and the work of other international organisations. References to EU or international initiatives usually set the scene for the policy, put policies in a wider context, and create momentum for working on digital competence in IVET.

However, there are also examples of policies that are developed explicitly from EU and international initiatives. For instance, DigCompOrg and Digital Schools initiative are explicitly used in developing criteria for digital training and learning in the Digital education strategy of Hungary. Examples of policies and references to EU initiatives are presented in Box 8.

Box 8.   **Examples of policies with references to EU initiatives**

Spain: Digital agenda, 2013
The Spanish Digital agenda is based on the European Commission Digital agenda.

Hungary: Digital education strategy of Hungary
The strategy mentions DigComp several times:
1) International criteria applied by DigCompOrg will be considered in developing a set of criteria relying on the typical key processes and activities of organisations engaged in digital training and education;
2) The Digital school label system is planned to be linked to the DigCompOrg framework to ensure international comparability.

Latvia: Guidelines for development of information society 2014-20
The guidelines refer to:
• Europe 2020. Strategy for smart, sustainable and inclusive growth;
• Digital agenda for Europe, Digital agenda for Europe - Driving European growth digitally;
• European eGovernment action plan 2011-2015;
• Ministerial Declaration on eGovernment;
• Grand coalition for digital jobs;
• Entrepreneurship 2020 action plan;
• eHealth action plan 2012-2020 - Innovative healthcare for the 21st century;
• Cyber security strategy of the EU: an open, safe and secure cyberspace;

| • | Commission recommendation on the digitisation and online accessibility of cultural material and digital reservation; |
| • | European strategy for a better internet for children |

Source: Cedefop.

The time dimension of policies also has an obvious impact on the extent to which the activities for policies were already implemented. As shown in Figure 9, two-thirds (66%) of policies addressing digital competence have (largely) implemented the activities as planned, against 32% of policies that are still in the process of implementation. Policies adopted after 2015 show the opposite, with 39% having currently implemented activities as planned, and 57% in process. Activities were not conducted as planned in the Northern Ireland strategy for further education (2016), which sets out a wide range of actions to improve the quality of further education, including raising the level of ICT competence of VET graduates by adopting updated qualifications. The design of these updated qualifications had been conducted as planned, but the broader rollout of these qualifications is yet to be done. This delay in implementation is mainly caused by the slower than anticipated introduction of the youth training scheme (which foresees including structural revisions to apprenticeships and is to be launched together).

Figure 9.   **Digital policy implementation**
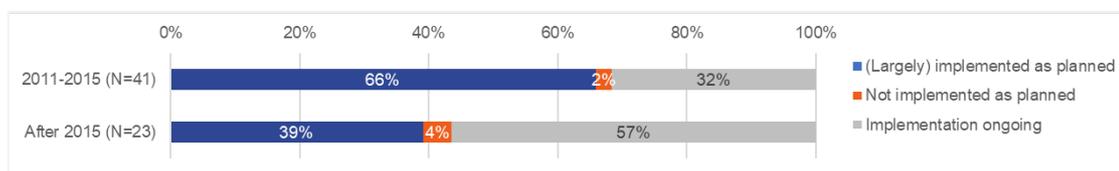
NB: N=64.
Source: Cedefop.

3.1.3.   Policy focus areas

This section shows how the variety of ways in which policies promote digital competence also has consequences for reaching results. Policies with a focus on embedding digital competence in IVET do so through four interrelated areas: reference documents, such as education and occupational standards; programme delivery; assessment standards; and teacher/trainer training. The scope of each of the policies that explicitly defines an area to embed digital competence in IVET is mapped in Figure 10. The four coloured rectangular shapes represent the four areas, with the resulting individual boxes representing the number of policies that show overlap between areas.

Figure 10.   **Intervention areas of national policies embedding digital competence**
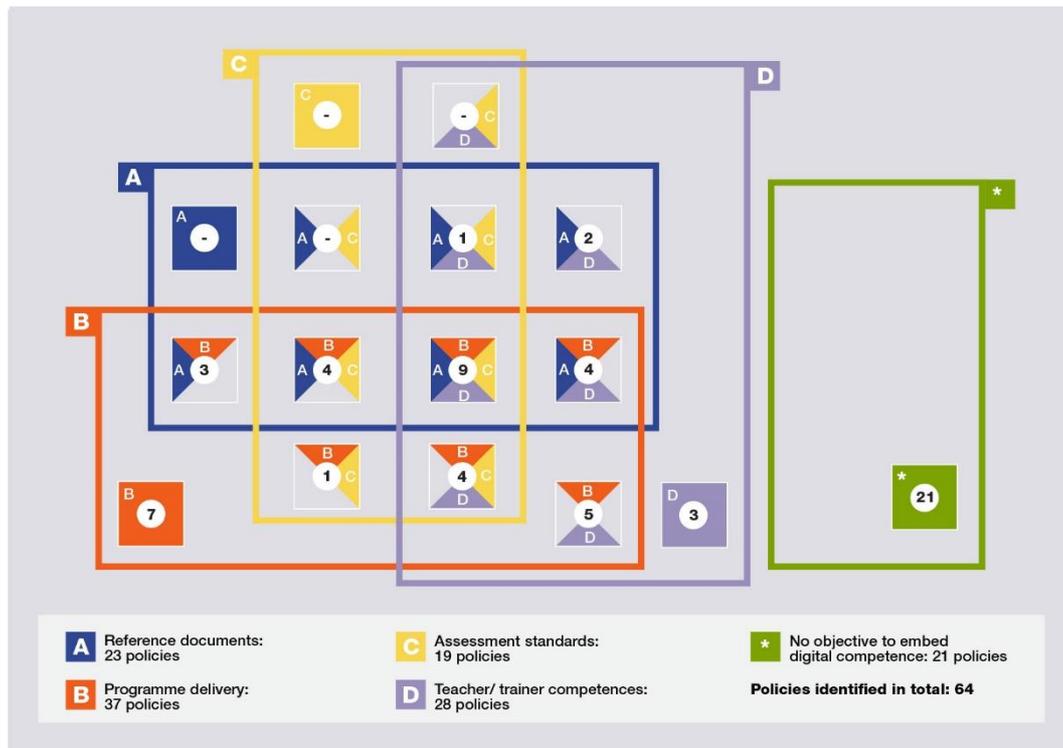
NB: N=64.
Source: Cedefop.

A total of 23 policies focus on embedding digital competence in reference documents (blue area A). With 37 policies addressing programme delivery in IVET (orange area B), this is the area through which most policies aim at embedding digital competence. The figure shows considerable overlaps between policies that address both reference documents (A) and programme delivery (B), with 20 policies that address both areas. The second most common area of policies that seek to embed digital competence is teacher/trainer training (28 policies, violet area D): 19 policies aim to embed it through revising assessment standards (yellow area C). The last two areas also most often overlap with programme delivery (B). A final group of 21 policies was identified that did not define embedding digital competence as an objective.

In practice, most policies combine more than one of these areas in a single policy. A total of nine policies have activities to embed digital competence in all four of these areas in a single policy (overlapping area of all four rectangles in Figure 10). An example of a policy that targets all four dimensions is the Estonian Programme of digital focus, which proposes a holistic approach to developing digital literacy and the purposeful use of digital resources in the learning process, thereby supporting the implementation of a changing learning environment. By

doing so, it targets all dimensions in relation to embedding digital competence into IVET.

3.1.3.1. *Programme delivery*

Most commonly, policies concentrate on embedding digital competence by changing the delivery of IVET programmes (37). Within this group, two main categories of policy can be identified: most increase attention to digital competence in existing courses or introduce new subjects (57% or 21 out of 37 policies). This is done, for instance, through introducing a minimum number of hours dedicated to digital skills in certain programmes, or the development of new pedagogical material to embed digital competence better in existing programmes. In Hungary, the strategy to reduce early school leaving (2014) has introduced practical ideas for VET providers to integrate in their lessons in digital competence. The remaining policies (43%) proposed changes to the delivery of IVET programmes more indirectly, through the development of curricular guidelines or framework curricula. These policies have the same objective as those that change curricula directly but allow more freedom at the local and/or provider level to interpret how key competences are reflected in programmes.

The success of these policies is measured by the extent to which they result in actual changes in the delivery of IVET programmes. An assessment finds that 76% of the policies (28 out of the 37) show observable changes in programme delivery. This does not mean, however, that the remaining nine policies were not successful; changes to IVET programmes may be subtle, may take place gradually, or a policy may be limited to voluntary guidelines that leave it up to VET providers to shape such changes further. This last category is becoming more relevant, as IVET providers have increasing autonomy to design programmes (Cedefop, 2018). This autonomy is generally given within a national framework curriculum, often further limited by the reference documents (education and occupational standards), and with due respect to assessment standards. It can still be expected in these cases that national policies may not always directly concentrate on the inclusion of digital competence components in programmes, even though this is the main desirable outcome of that policy.

3.1.3.2. *Reference documents (education and occupational standards)*

A second group of policies seeks to embed digital competence in IVET through revision of reference documents (education and occupational standards**)** of IVET qualifications (23 policies). A screening of the policies in this category shows two broad categories.

The first covers most policies and includes those that develop or revise reference documents to position digital competence better in IVET (74% or 17 out of the 23 policies). For these, the introduction or revision of digital competence in IVET reference documents is the primary objective; it is structured by a formal competence framework, in which digital competence is further defined and clarified. Rather than imposing new standards, competence frameworks can also be an inspiration for IVET institutions to embrace digital competence in their programmes. In Germany, the strategy Education in the digital world (2016) offers an approach to mainstream digital competence in VET schools (see also Box 10). The Swedish decision to strengthen digital competences (2017) focuses on highlighting the importance of defining digital competence in qualification standards. The policy goal is to increase ICT usage by companies and citizens, and to achieve gender equality in ICT and equality in students' digital competence.

A second category of policies embeds digital competence in IVET through revising reference documents while restructuring the broader IVET system (26%: six policies). These consist of broader reforms for the IVET sector (such as the introduction of a learning-outcomes approach or revising reference documents to take better account of modular learning), which also offer an opportunity to include new requirements for digital skills. In Slovenia, the guidelines for the preparation of VET instruction were renewed in 2016 and now include requirements for VET qualifications related to digital competence.

National policies of this sort may inspire changes to the description of digital competence in national guidance documents and frameworks. Through such structures, policies revise the formulation of learning outcomes as included in reference documents at the national level. However, it often takes time before such revisions have an observable impact on IVET, so delays should not be understood as failures/challenges in policy implementation. The process of revising the specific content of individual qualification profiles and learning outcome definitions tends to be done according to a fixed and more long-term schedule, which does not necessarily coincide with the time between policy implementation and this study period. Implementing changes to reference documents is time-intensive, as these often depend on changing legislation, and require the consent from a variety of stakeholders. An example from Hungary underlines this challenge in more detail.

Box 9.   **Digital education strategy (2016-20) (Hungary)**

The Digital education strategy of Hungary aims to improve the digital literacy level of all citizens. Although progress has been reported and numerous steps have been taken to embed digital competence in VET, several challenges have been identified. For instance, achieving the strategy goals will need more time than initially planned. Embedding digital competence in VET learning outcome requirements for qualifications has been delayed because this requires amending current legislation. The requirements of ESF-funded projects are also hindering implementation because of the complexity of adaptive requirements to publish calls for proposals.

The following areas have not yet been implemented: training programmes and employment of ICT pedagogical assistants and system administrators to foster use of ICT tools in schools; making online learning content accessible for users with reduced capacities; embedding digital competence into teacher career structures; and embedding digital competence in vocational and outcome requirements of VET qualifications. Areas where implementation is much slower than planned are developing the digital competence framework system; improving the wi-fi network in education institutions; acquiring digital tools and equipment; and embedding digital competence in the national core curriculum.

Difficulties in implementation are related to the lengthy negotiation process of decision-makers, budgetary constraints, and lack of institutional cooperation from stakeholders involved in implementing the strategy. The objectives and the VET institutional and legal context have also undergone major changes, which have presented challenges for strategy planning and implementation.

As strategy development was preceded by thorough preparation for implementation, neither the objectives, nor implementation will be revised. In some cases, implementation has had to be adapted to the needs measured in the frame of the programme.

Source: Cedefop.

Similar challenges were also identified in the implementation of the Education in the digital world strategy (2016) in Germany where, beyond autonomous VET schools, local governments also need to be involved in any process of revising learning outcomes as included in reference documents.

Box 10.   **Education in the digital world strategy (2016) (Germany)**

Education in the digital world is a strategic concept to mainstream digital competence in schools, vocational education and institutions and higher education in all 16 Federal States of Germany. The overall strategy objective for IVET is to increase access to a digital learning environment and to improve digital skills through revision of framework curricula, and implementation of IVET and continuing VET (CVET) measures for VET school teachers. The policy covers the whole IVET sector (dual system/apprenticeship and full-time vocational schools).

The following challenges are identified in the implementation of the strategy.

(a) The abstract formulations in the strategy require elaboration of specific steps to make it work. Requirements touch on the autonomy of the Federal States in educational affairs in terms of classroom equipment and other learning environments and didactics and teaching methods.

(b) The high degree of diversity in VET, considering also different economic structures in the regions. It is difficult to implement the strategy covering all 326 occupations that require formal qualification (apprenticeship) and some 150 occupations in the school-based VET system.

(c) If VET schools are not adequately equipped and do not have the benefits of broadband expansion, digital competence will be difficult to develop in school-based IVET.

(d) VET school teachers need enough time to receive additional training in digital competence.

(e) Lack of a central platform for the exchange of digital teaching and learning media, which would accommodate easy exchange of ideas and approaches across German Federal States. A central exchange platform would be useful for VET teachers to obtain up-to-date teaching and learning material for occupations with little demand.

Source: Cedefop.

3.1.3.3.   *Teacher/trainer competences*

Many policies also acknowledge the importance of the teacher/trainer role in increasing digital competence (28 policies). To improve focus on digital competence, two main categories have been identified among the selected policies.

A first category – the training of teaching staff – is a crucial element for a substantial majority of policies (75%, 21 out of 28 policies), of which most (16 policies) focus on (re)training the existing teacher workforce through CPD; only a few focus on initial teacher training. In Ireland, a professional development strategy for the IVET sector (Further education and training professional development strategy 2017-19) has a professional development framework to enable teachers and trainers to support better the needs of learners, employers and communities. Technology-enhanced learning is one of the key priorities of the strategy, which reflects an increasing acceptance within the IVET sector of the importance of embedding technology to benefit learners, teachers and employers. In Latvia, the

Education development guidelines' action plan 2015-17 embedded digital competence in all four areas but pays attention to teacher training. It requires teachers to be digitally competent, and to understand how key competences are integrated in IVET. Despite that it considers teacher training the most important, it is also where it faced most challenges in this area. The education guidelines implement the country's *Guidelines for information society development* into education, for which the support of teachers is needed along with their management to improve digital competences of teachers.

While training of teachers is most often observed, a second category of policies consists of the development of support material or the setting up of support structures for teachers. In seven out of the 28 policies (25%) these structures are offered without a clear link to CPD for teachers. The Icelandic *National curriculum guide*, for instance, provides specific pedagogical material for teachers to help them apply new provisions about digital competence. In Sweden, the National digitalisation strategy supported the National Agency for Education to develop modules for digital training that can be used by teachers in the IVET system.

Box 11.   **Guidelines for development of information society 2014-20 (Latvia)**

The *Guidelines for information society development 2014-20* stress the importance of including digital literacy in all education levels, including VET. In the context of VET modernisation reform, the hardest task seems to be the development of teacher digital competence. This requires management support from IVET school leaders and teachers. The planned improvements include change to education programmes, more focus on competences, and combining response to market needs and new technologies for the learning process. Implementation of the reform process requires more engagement of teachers and school leaders. However, there is little extra capacity to develop digital competence and IVET management among teachers who often work double shifts and do not have basic digital skills. As a result, a substantial proportion of teachers are not enthusiastic about the additional competence building.

Stakeholders also indicate that the national guidance on implementation has been relatively loose without concrete follow-up. The main body for policy implementation and measures in ICT skills is the National Centre for Education. Even though it is an authority under the education ministry and represents national policy, some schools sidestep recommended voluntary improvements and await mandatory directions from the ministry.

The relatively limited implementation of the policy may also be explained by the high proportion of IVET curricula devoted to general education subjects, with little room for additional courses on digital competence. This is, at least, an argument for school leaders and teachers to avoid implementing such courses. There appears to be little room to include digital competences as a dedicated course in the VET curriculum and more potential include such competences in specific subjects.

Source: Cedefop.

Box 11 illustrates the common challenge policies promoting digital competence face to secure the support of key stakeholders, particularly teaching staff. While policies that explicitly focus on embedding digital competence in teacher training are often successful, they also meet resistance if teacher needs and experience are insufficiently reflected in proposed policy reforms. In the Estonian *Programme of digital focus* (2018-21), where changes could be observed in teacher training, there are concerns about teachers' willingness to continuously update their skills and evaluate themselves. As shown for Romania in Box 12, it is not only the willingness of teachers that may vary: their existing digital competence is also an important factor that requires training to consider. Additional training needs to avoid a one-size-fits-all approach, and instead be tailored to the specific needs of teachers, which may vary substantially between different regions in a country.

Box 12.   **The National strategy for the digital agenda 2014-20 (Romania)**

The National strategy for the digital agenda for Romania 2014-20 aims to develop digital competences and widen access to technological facilities. For IVET, the strategy consists of actions to develop students' and teachers' digital competence. Implementation of the education action plan has been pushed back due to the following challenges:

1) low commitment by non-governmental stakeholders; it is not clear to what extent planned incentives and processes will assure full involvement of other stakeholders; 2) discrepancies between more developed areas with vulnerable populations, especially the rural/urban divide which introduces challenges to coherent planning of national actions in IVET. Equipment and internet access are limited in rural areas not only in schools but also in the population. Digital competence levels are much lower in the population, but also among teaching staff. This requires more profound interventions, and more diversity in interventions tailored to the people's needs;

3) high dependence on European funds; the delay in accessing funds has had a much greater impact than expected.

Source: Cedefop.

3.1.3.4.   *Revising assessment standards*

Key competence policies are embedding digital competence in IVET through revision of assessment standards (19 policies). Within this group two types can be identified; policies that introduce new exams focused on digital competence (21%), and those which revise the standards for existing assessment procedures (79%). From the perspective of digital competence, the French Ministry of Education has developed the PIX platform as a pilot project to evaluate student digital competence. This pilot project provides participants with certification in relation to the European framework of digital competence and can be extended to all schools.

In Hungary, the Digital education strategy (2016) aims at the embedding of digital competence in education, as an instrumental competence, providing access for individuals to broader learning opportunities. It does so by developing a digital competence framework (based on DigComp), to allow the assessment and further development of digital competence. At the same time, it seeks to develop the digital competences of teachers and trainers in VET, to be able to administer it as assessment tool. These policies are concrete examples of how new assessment standards are drawn up for digital competence specifically. When it comes to revising existing assessment standards to embed digital competence, policies face more challenges.

Setting the standards for assessment of IVET qualifications is often decentralised and dominated by occupation-specific competences, with limited room to assess digital competence that is not occupation-specific. This means that policies may often not directly influence assessment standards. Local assessment boards, often with roots in the local labour market, tend to prioritise the assessment of occupation-specific competences over more general non- occupation-specific digital competence. Even in policies where an effect is found, changes to the assessment of digital competence were relatively minor. In Poland, the Lifelong learning strategy 2013-20 foresees new examination elements oriented to digital competence but, at the same time, increases employer involvement in assessment of learning outcomes. Where an effect is observed in assessment of learning outcomes, this is often accompanied by changes to either the reference documents or the programme delivery elements. This further underlines the importance of integrated policies that target embedding digital competences in IVET from multiple directions.

3.1.3.5. *Policies not embedding digital competence*

Figure 10 also shows that 21 of 64 policies promoting digital competence do not explicitly focus on embedding this competence. These are often broad national policies that mention digital competence, without specific actions or objectives to embed it into IVET. Because they aim at promoting, but without embedding, digital competence in IVET, their success should not be assessed based on the extent to which these policies result in changes in IVET. Several policies in this group introduce key competences, and the meaning of digital competences more specifically, clearing the way for more specific policy actions and strategies after these are published.

Key competences are often referred to in such policies, but implementation in education is only a secondary, supporting and not further operationalised objective. Examples are the National lifelong learning strategy in Romania (2015),

and Ireland's National skills strategy (2015). These broader strategies all underline digital competence as a transversal skill, but do not specifically indicate the consequences for IVET programmes. Another good example of this is the Swedish Digital agenda (2011). This policy was presented as a broad strategy that outlined visions for all aspects of society, implicitly covering IVET, but without outlining how this vision on digital competence should be embedded into IVET. How is it then possible to assess the effectiveness of this policy? In view of its long-term objectives and no operationalised actions, the best measure of success is the follow-up to this policy in the form of more specific strategic actions. In this case, Sweden adopted in 2017 the National digitalisation strategy for the education system, which is inspired by the broader framework of the 2011 Digital agenda strategy, but instead translates these broad aims into an approach to embed digital competence into IVET.

It is also possible that policies do not aim at embedding, but still have a certain effect on the embedding of key competences in IVET. For example, the Maltese referencing report (2016) does not aim at embedding digital competence (nor key competences more broadly) into IVET. Instead it restructures the way qualifications are described. The policy does seek to change the content of qualifications but proposes a restructuring of them. The success of such policies should be measured by the extent to which they restructure qualification profiles, not the extent to which they embed digital competence (or other key competences). However, this does not mean that they will have no effect on embedding; in fact, by restructuring the way that qualifications are described, such a policy increases the prominence of digital competence in qualification profiles.

3.2. Digital competence in qualification types

Key messages:
- In a school-based setting digital competence is predominantly integrated with other subjects (25 of the 49 school-based qualification types).
- A combination of stand-alone and integrated digital competence is usually provided in school-based locations that include work-based learning in school workshops and laboratories (nine of the 23 types that integrate work-based learning in schools).
- In apprenticeships, digital competence is mainly integrated in the learning of other competences (four of five apprenticeship qualification types).
- There are no significant differences between EQF levels 3 and 4.

This section discusses how digital competence is included in qualification types: a group or cluster of IVET qualifications that share specific characteristics, for example subsystem, legal regulations and regulatory body, purpose, general educational objectives as well as duration of related programmes, access requirements or level of labour market entry. In the 35 national VET systems there are 78 qualification types. The data analysis enables statements to be made on how digital competence is included in qualifications in a specific qualification type: through a prism of education and occupational standards (reference documents), IVET programme delivery, and assessment in qualification types (Figure 11).

Figure 11.   **Digital competence in IVET qualification types**
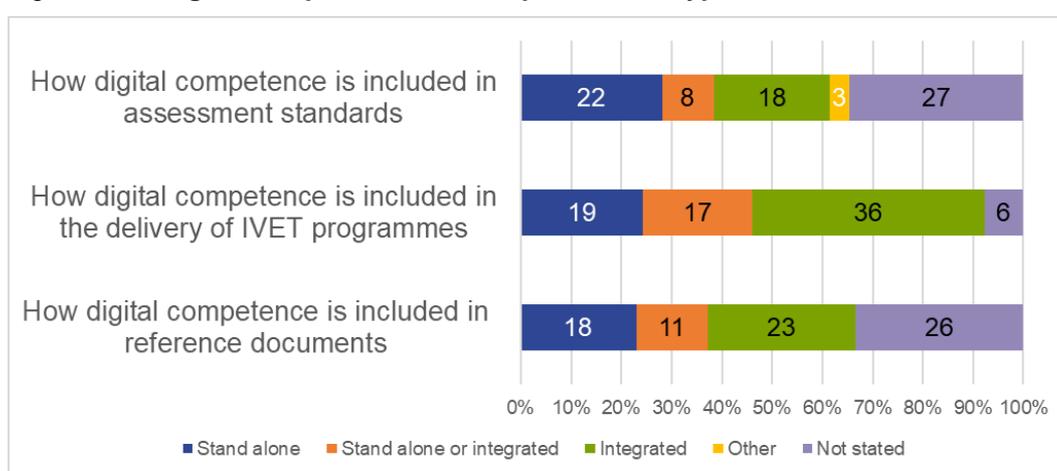
NB: N=78 qualification types. 'Other' refers to the BE-FL situation where assessment is the responsibility of the school. There is no national approach.
Source: Cedefop.

When looking at inclusion of digital competence in the reference documents, programme delivery and assessment of standards, digital competence is delivered (in all but six qualification types), though not mentioned in reference documents (26 types) and assessed (27 types) in many qualification types. This may be because digital tools are used in the delivery of other subjects without explicitly expressing what learners should acquire in terms of digital competence. For instance, they should be able to work in an online learning environment, submit their papers or homework online, and give a presentation using presentation software.

3.2.1.   Digital competence in reference documents

Reference documents (education and occupational standards) guide the education process and the content of education and training pathways. This section examines whether these documents contain references to digital competence.

As shown in Figure 11, 18 qualification types have digital competence included as a stand-alone description in the reference documents. This is the case in Poland (certificate of VET school completion, EQF level not defined) and Slovenia (upper secondary vocational education, EQF level 4), where digital competence is described separately in a core curriculum. In Italy, digital competence is described in two base competences: linguistic and mathematic-scientific-technological competence. Another 11 qualification types describe digital competence as stand-alone and as integrated learning outcomes. A further 23 qualification types have digital competence integrated in other sets of learning outcomes and educational objectives, such as learning outcomes on occupational practice or related to literacy.

In 34% (26 qualification types), digital competence is not stated in the reference documents, possibly because it is not mandatory but optional depending on the occupational orientation. For that reason, digital competence is not included in general guidelines on the development of learning outcomes and educational objectives of individual qualifications, programmes and curricula. For instance, the Belgium German-speaking Community qualification type proof of competence on successful completion of year six in VET has no specific framework plans for digital competence (no stand-alone description). Digital competence can be mentioned in the occupation-specific parts of the curriculum.

3.2.2. Digital competences in IVET delivery

As shown in Figure 11, digital competence training is provided as a stand-alone subject/module in 25% (19) of qualification types. For instance, stand-alone digital competence is provided in Bulgaria, Czechia, Greece, Cyprus and Portugal. In Cyprus, an introductory ICT course is compulsory in first-year studies, while optional ICT courses are offered for all specialisations in the second and third year. In Portugal, digital competence (ICT knowledge) is taught as a separate subject under the training component common to all learners: in professional programmes within the sociocultural component; and in apprenticeships within the scientific-technological component. In Czechia, digital competence is a compulsory, stand-alone ICT subject, with minimum allocation of one lesson per week in each year of the education programme. Thus, digital competence can be included as a stand-alone module in specialised vocational subjects (such as specific occupational software), in general subjects (as a source of information), or in dedicated ICT subjects.

In 47% of qualification types (36 qualification types), digital competence is integrated. For instance, in Germany, it is in the work-based VET (EQF level 3 and 4) in which key competences are integrated in other subjects, usually

profession-oriented. In Croatia, the National curriculum on vocational education defines generic competences for all qualification types (EQF levels 2, 3, 4 and 5). These competences are defined in reference documents in three main clusters: opinion forms, individual and social development, and mode of work and use of tools that includes digital literacy. These generic competences are also integrated in other subjects. In another 21% (17 qualification types), digital competence is provided in a combination of stand-alone and integrated subjects/modules. In the Netherlands, digital competence can be integrated in civic education or occupation specific courses. Electives can be devoted to digital competence, as in the Netherlands and Austria. In 8% of qualification types (six qualification types), digital competence is not mentioned.

Digital competence is mainly integrated with other subjects in qualification types offered in a school-based setting (25 of the 49 school-based types). In these cases, learners must work with digital tools (computers) to acquire higher level digital competence. This generally relates to generic digital competence but can also include occupation-specific, such as computer aided design (CAD) drawing software. A combination of stand-alone and integrated digital competence is usually provided in school-based locations that include work-based learning in school workshops and laboratories (nine of the 23 types that integrate work-based learning in schools). Digital competence is offered separately and can involve general digital competence and occupation-specific competences. Both are contextualised in the work environment. In apprenticeships, digital competence is integrated in the learning of other competences (four of five apprenticeship qualification types).

3.2.3. Digital competences in assessment standards

Countries apply different assessment approaches to IVET, even differentiating between qualification types. This can consist of a final assessment or certification exam at the end of a training programme, or an accumulated assessment of modules, units, and credits without final assessment. If there is final assessment, it can be done by different methods, such as written exams, oral and/or practical.

As shown in Figure 11, 29% (22 qualification types) assess digital competence as a stand-alone subject/module. In the upper secondary vocational qualification (EQF level 4) in Cyprus, stand-alone assessment of digital competence is carried out for individual technology subjects. Assessment is continuous and consists of tests and final examinations. In 10% (eight qualification types), digital competence is assessed both in stand-alone assessment and integrated in the assessment of other competences. Digital competence is assessed as either a stand-alone subject/module or integrated with other competences in upper secondary

vocational education with apprenticeship certificate (EQF level 3) in Czechia; ICT is taught as a stand-alone subject/module and the learning outcomes are defined by the national curricula. However, digital competence is a prerequisite in many vocational subjects and learning outcomes are also assessed in these subjects.

Assessment of digital competence is integrated with other competences in a total of 18 qualification types (23%). For instance, digital competence is assessed together with other general education or vocational subjects in the lower secondary VET qualification (vocational bridge programme, EQF level 3) in Hungary. These general subjects include mathematics, basic employment and career guidance and social studies and current social issues.

For 35% (27 qualification types), digital competence is not specifically assessed or is not assessed in all qualifications included in the qualification type. This is the case in:

(a) Austria, the French Community of Belgium, Latvia for certificate of vocational education/certificate of vocational education with professional qualification, EQF level 3;

(b) Iceland and the Netherlands, and France for BAC PRO: vocational baccalaureate, EQF level 4;

(c) German-speaking Community of Belgium, Poland, UK-England, UK-Northern Ireland, UK-Wales for Level 2 technical certificate/advanced technical certificate;

(d) UK-Scotland for national qualification group awards, national certificates and national progression awards.

In Latvia, digital competence is not assessed because it is not a separate subject.

Mapping how digital competence is assessed indicates that assessment is underdeveloped for all qualifications in a qualification type. Digital competence assessment is not mentioned in many qualification types and is closely related to whether digital competence is required for occupational practice.

3.2.4. Digital competences and EQF levels

There are no differences in how digital competence is covered at EQF level 3 and EQF level 4. In reference documents and assessment, however, EQF level 3 qualification types have a higher inclusion rate compared to EQF level 4 qualification types: for reference documents 78% compared to 71%; for assessment 73% compared to 71%. At EQF level 4, digital competence training is more advanced and related to specific occupational practice.

3.3. Digital competence in individual IVET programmes

This section discusses the extent to which digital competence is included in curricula, based on a selection of three individual programmes per VET system leading to qualifications (105 in total) in the following sectors ([27]):

(a) waiter/waitress training in the accommodation and food service;
(b) welder in manufacturing;
(c) bricklayer in construction.

In the analysis, the following aspects are considered:

(a) delivery of digital competence (Section 3.3.1);
(b) assessment of digital competence (Section 3.3.2);
(c) teacher/trainer skills in teaching digital competence (Section 3.3.3).

Insights into whether digital competence is considered to be a 'pure' key competence, required by all citizens in the 21st century, or whether it is an occupation-specific competence are discussed in Section 3.3.4; the extent to which formal EU definition is reflected in the learning outcomes descriptions in education and occupational standards in covered in Section 3.3.5.

3.3.1. Delivery of digital competence in VET programmes

Key messages:

- While sector differences exist, digital competence is most commonly delivered as integrated in other subjects (35%).
- In work-based programmes with limited school-based learning, digital competence is equally often delivered as a stand-alone subject/module (30%) or integrated in subjects/modules, such as occupation-specific ones (30%). In school-based programmes that include some type of work-based learning in school workshops/laboratories or internships, digital competence is mostly integrated in other subjects (36%) or is delivered both as a stand-alone subject/module and as integrated in other subjects (32%). An example of the latter is when digital competence forms part of general education subjects and at the same time is integrated in job-specific subjects.
- In 13% of programmes at EQF level 3 and in 15% of programmes identified at EQF level 4, digital competence is perceived as foundational and supporting development of other learning outcomes.

([27]) In countries where one or more of the qualifications was not available, qualifications as similar as possible were selected for further investigation.

- The teaching approach to digital competence largely depends on individual teachers and trainers. However, the most frequent way of delivering digital competence in the 105 programmes investigated is by a teacher in computer laboratories (34%), followed by learning by doing (32%) where students apply tools and procedures guided by a teacher/trainer in different contexts and in various modules.

3.3.1.1. *Organisation of learning*

Information was collected on how digital competence is delivered in the 105 programmes in 35 VET systems in the EU+. It is delivered as a stand-alone subject/module (21% of programmes) in which digital or ICT education and training is the focus. In such individual subjects, learning outcomes can be delivered differently, including generally as basic ICT education, with a professional focus, by explaining and using vocation-related tools and instruments, and by combining both a general and a vocation-related focus.

When delivered as a stand-alone unit (subject/module), digital competence is more often non-foundational for acquiring other learning outcomes. It is also more often considered to be a 'pure' key competence rather than an occupation-specific competence (see Chapter 1 for definition of 'pure' versus occupational key competence). The latter may be linked to the general delivery of digital competence as basic ICT education.

Digital competence can also be integrated in other general and/or occupation-specific subjects (35% of programmes), in which digital tools are used and/or digital content is produced. Digital competence can be delivered both as a stand-alone subject/module and integrated in other subjects/units (28% of programmes). In such cases, digital competence is delivered in a separate module, but digital tools or digital content are used and produced in other subjects (general and/or vocation-related). Delivery of digital competence in programmes in the three sectors is presented in Figure 12.

Figure 12. **Delivery of digital competence in the programmes per sector**
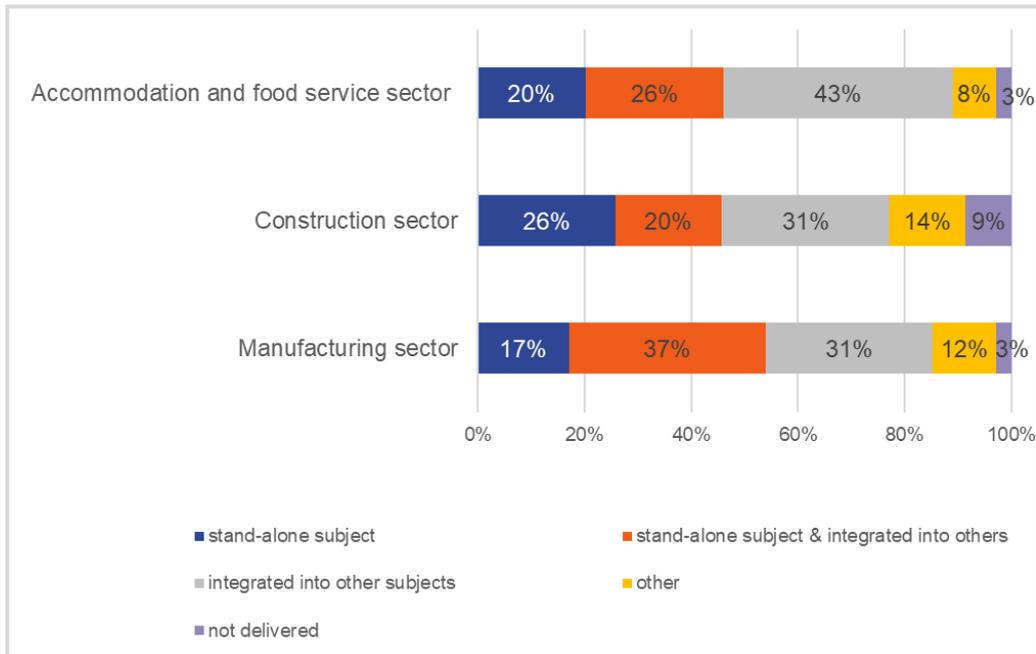
NB: N=105 programmes. The category 'other' means that the delivery of digital competence depends on
        the vocational school, material resources and teachers'/trainers' approach/teaching methods (whether
        teacher/trainers use digital technologies in the learning process).
Source: Cedefop.

In the accommodation and food service sector, digital competence is most frequently integrated in other subjects (43%). This is the case for programmes in the German-speaking, Flemish and French Communities of Belgium, Croatia, Denmark, Estonia, France, Italy, the Netherlands, Norway, Luxembourg, Slovenia, Spain, Sweden and UK-Scotland. In most of these cases, digital competence is integrated in vocation-related subjects (the French Community of Belgium, Denmark, Spain, Croatia, Italy, Netherlands and Slovenia). For example, the training programme for a technician in restaurant services in Spain refers to digital competence in several professional modules, such as use of computer applications in invoicing and payment for services. In the Dutch manager waiter/waitress programme, no specific courses on digital competence are described in the qualification file, which is the relevant reference document; these competences are acquired while working in a restaurant. In Estonia, Luxembourg and Sweden, digital competence is delivered integrated mainly in general modules.

In the construction sector, though to a lesser extent (31%), digital competence may be integrated in the training programmes in one of several ways:

(a) in professional modules (Germany, Estonia and Spain) and thus considered relevant for the job practice;

(b) integrated in general subjects (Austria, Iceland, Slovenia, Sweden and UK-Scotland);

(c) integrated in general and in occupation-specific modules (Flemish Community of Belgium, Latvia and Norway).

In the training programme for the bricklaying trade certificate in Norway, digital competence is not a stand-alone module, but a skill integrated in other modules. The programme includes professional subjects for bricklayers and common core subjects for all programmes in the Norwegian upper secondary education. Digital competence involves general digital literacy and digital competence specific to the bricklayers, such as the use of digital tools for documenting the production process, digital timesheets, building information modelling (BIM) and reading digital blueprints.

In the manufacturing sector, digital competence is most commonly delivered as a stand-alone module/subject and integrated in other modules/subjects (37%). The reason is that in welder or related qualifications, digital competence is often delivered in specific courses, such as CAD and computer numerical control programming (CNC programming) and is also integrated in occupation-specific and/or general modules. This is the case for programmes in the manufacturing sector in Cyprus, Czechia, Germany, Ireland, Italy, Luxembourg, Malta, Poland Romania, Slovenia, UK-Northern Ireland, UK-Scotland, UK-Wales. An example of digital competence delivery in the manufacturing sector is the metal fabrication programme in Ireland (see Box 13).

Box 13.   **Digital competence delivered as both stand-alone unit (subject/module) and integrated in other units in the metal fabrication apprenticeship (Ireland)**

Digital competence features in four modules that are distributed in three of the seven phases of the apprenticeship programme. Two of the four modules focus on the development of general digital competences while the remaining two are occupation-specific and relate to the development of skills in CAD. The CAD module is an important competence foundation for other modules relating to the use of electronic machinery in metal fabrication and welding operations. An apprentice is also required to complete several self-paced common modules that are available in e-learning; one of these is introduction to information and communication technology. Apprentices are also required to prepare and submit an apprenticeship portfolio, which is a record to demonstrate their achievement of learning outcomes from phase 2 onwards. The portfolio comprises documents, photographs and video clips, and the apprentice is responsible for uploading the materials to an online repository. Digital competence is integrated into programme delivery as independent modules and as foundation for acquisition of other skill.

Source: Cedefop.

There are no apparent differences between programmes at EQF levels 3 and 4 because the main delivery mode of digital competence is the same, either a stand-alone subject/module or both stand-alone subject/module and integrated in other subjects/modules. One reason may be that progress to a higher level is aspiration of programmes at EQF level 3 (31 programmes; 58%) and EQF level 4 (53 programmes; 51%). Digital competence is delivered as a stand-alone subject/module and also integrated in other subjects to ensure an appropriate level to progress to higher education levels.

We assumed that delivery of digital competences would be more integrated with other subjects in work-based programmes. However, data (see Figure 13) show that digital competence is mainly delivered as stand-alone units (subjects/modules) in work-based programmes with limited school-based learning and also integrated in other units (30% each). This may be because in work-based programmes (such as apprenticeship) part of the delivery is done in vocational schools which often have a stand-alone subject/module for digital competence. Yet, digital competence is not delivered in 15% of these VET programmes.

Figure 13. **Delivery of digital competence per type of VET programme**
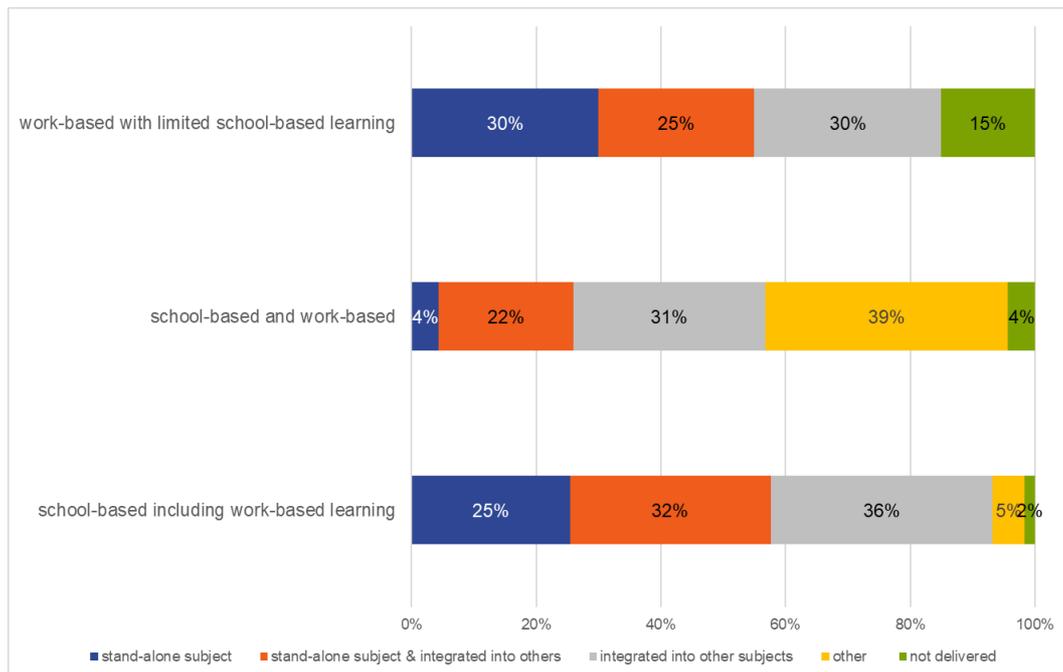
NB   N=102 programmes. Three programmes are not applicable. 'Other' means that the way digital competence is delivered varies depending on teachers (who may use modern teaching methods) and on the vocational school (their material resources).

Source: Cedefop.

3.3.1.2. *Foundational and non-foundational competence*

The foundational or non-foundational role of a competence indicates how it supports development of other competences within a VET programme.

Digital competence is foundational for acquiring other competences in 11% of the VET programme sample in construction, 17% in accommodation and food service, and 23% in the manufacturing sectors (Figure 14). Higher shares indicate higher demand for digital competence in other subjects/modules.

Figure 14. **Foundational and non-foundational digital competence by sector**
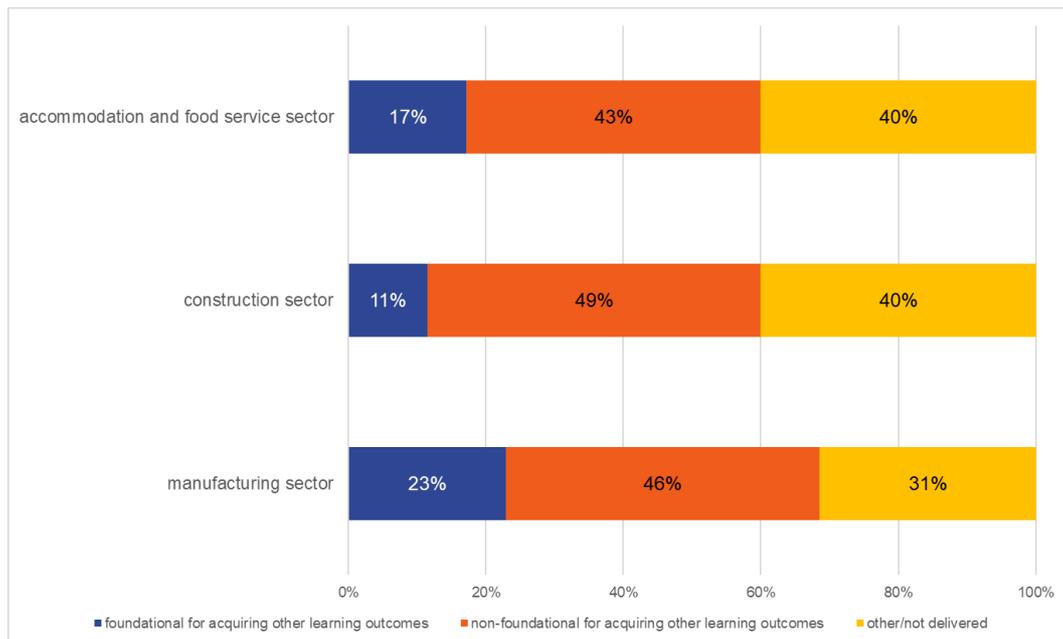
NB: N=105 programmes. The category 'other'/not delivered can mean that: 1) digital competence is not provided in a separate module but integrated in other modules; 2) positioning depends on the educational provider; and 3) digital competence is not part of the programme (not delivered).
Source: Cedefop.

In most programmes in the manufacturing sector, digital competence is non-foundational (46%). This category also includes add-on and elective modules that are not compulsory for acquiring a qualification. The situation in the construction and the accommodation and food service sectors is similar, with digital competence considered to be non-foundational in 49% and 43% of VET programmes respectively.

For example, in the higher technician metallic construction programme in Spain, digital competence is integrated in almost all professional modules. This means that it is foundational.

In Cyprus, digital competence is usually taught as a basic course in the first year of VET programmes to lay the foundation for complying with requirements in the following years.

Digital competence is considered foundational in 13% of EQF 3 programmes (31 in total) and in 15% of EQF 4 programmes (53 in total).

3.3.1.3. *Mode of delivery*

The digital competence delivery mode commonly depends on individual teachers and trainers. In all 105 programmes, digital competence is most frequently delivered by a teacher in a computer laboratory, followed by learning-by-doing in which competence is acquired in context-specific modules with guidance from a teacher/trainer. Digital competence delivered in the classroom is the third most popular option ([28]). An overview of the delivery modes in the three sectors is presented in Figure 15.

([28]) Where classroom delivery is indicated, it might be assumed that classrooms are equipped with technology (tablets and, laptops) for hand-on experience but it was not specified whether this is the case.

Figure 15.   **Delivery mode of digital competences in sector VET programmes**
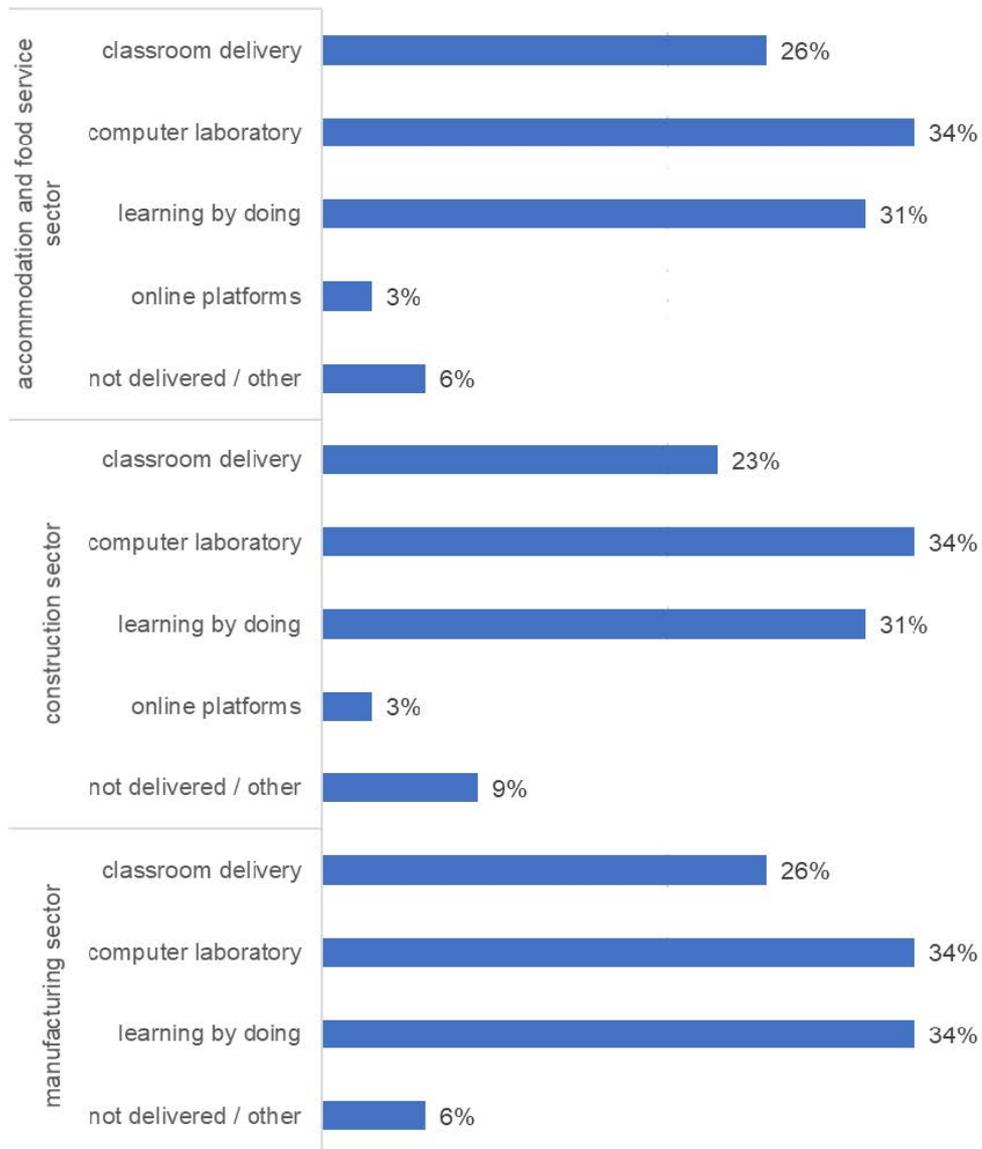
NB: N=105 programmes.
Source: Cedefop.

Box 14.   **Examples modes of delivery of digital competence**

Romania, programme for bricklayer/mason/plasterer (EQF level 3)

Form of delivery: computer-laboratory with an informatics instructor/teacher and learning by doing in various subjects: information and communication technology is usually delivered in IT laboratories, based on teacher-driven processes and individual applications under teacher coordination. Usually, no applications or specialised software are dedicated to professional tasks, but most of teachers adapt applications to the needs of the students.

Italy, programme for restaurant/bar technician (EQF level 4)

Form of delivery: computer-laboratory with an informatics instructor/teacher and project-based learning: digital competence is usually delivered in workshops. In Piedmont region, computer laboratories must be equipped according to the regional guidelines, providing at least one computer for each student, office automation, software and multimedia tools, a management station, network equipment, printers, scanners and projectors. In the region, the quality of computer laboratory equipment, training contents and didactic methods is checked frequently to allocate funds to training institutions. At the beginning of the vocational year, trainers define a training plan, in collaboration with their colleagues and coherent to the programme; they establish learning methods and the criteria of the training process evaluation. Theoretical learning is avoided. Students mainly use computers or other technological devices (smartphones, tablets) in workshop activities to accomplish practical activities and tasks.

Norway, programme for welder (trade certificate, EQF level 4)

Form of delivery: learning by doing in various subjects and work practice: the welding programme is organised through digital learning platforms and the use of Microsoft Office. Students also use specific digital tools for making drawings and plans. Digital competence is developed through applying these digital tools with teacher help. The digital machines and tools used by companies vary to such an extent that apprentices have to learn how to use them during their apprenticeship. However, schools aim to endow students with basic digital competence to enable them to develop the skills required to master specific machines.

Source: Cedefop.

3.3.2.   Assessment of digital competence in VET programmes

Key messages:

- Digital competence is assessed in 81% of the 105 training programmes (sample). Most often, digital competence is not assessed in the construction sector (29%).
- Most common assessment methods are written (24%) and oral tests (20%).

Digital competence is assessed in 81% of the 105-programme sample. In one programme (bricklayer in BE-FR), digital competence is not assessed but might

form part of assessment of some occupation-specific modules. Digital competence is not assessed in the construction sector (29%) more often than in the accommodation and food service sector (14%) and manufacturing sector (11%). It is more often assessed in programmes at EQF level 4 (87%) than at EQF level 3 (77%). The three programmes at EQF level 5 all assess digital competence ([29]).

Digital competence is most often assessed in school-based programmes that include some type of work-based learning (62%) compared with work-based programmes with limited school-based learning (18%) and programmes that combine school-based and work-based approaches (19%).

Assessment methods for digital competence applied in programmes are presented in Figure 16.

Figure 16. **Assessment methods for digital competence**
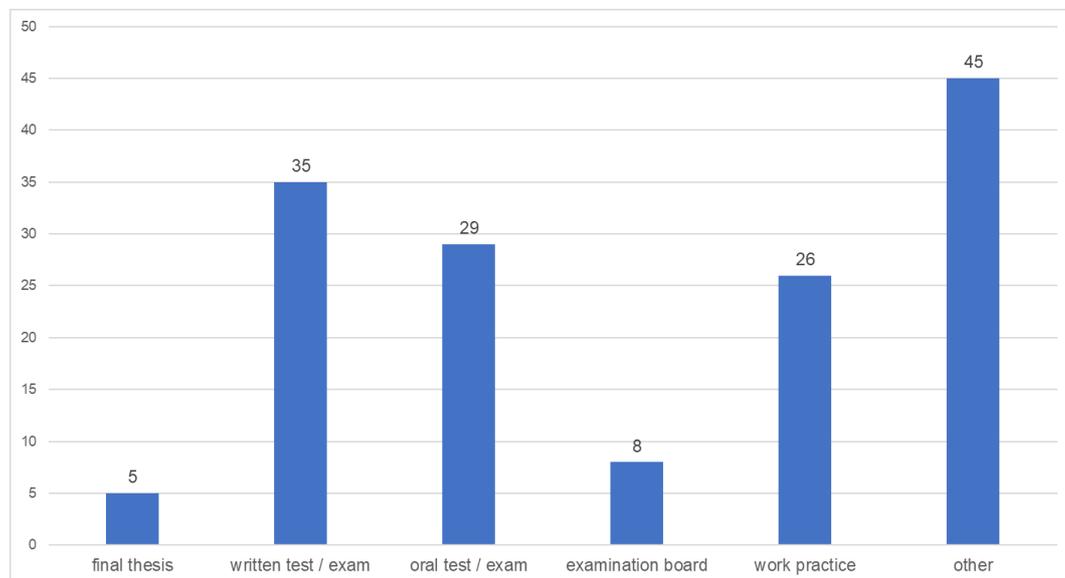
NB: N=85 programmes (only those programmes where digital competence is assessed), multiple answers possible.

Source: Cedefop.

The most frequent form of assessment is a written test/examination, followed by an oral test/exam and work practice. A combination of these assessment methods is used in many cases. As many as 45 programmes use other assessment methods, in some subjects through homework such as a portfolio. It can be also assessed in practical work in the class and written examinations, depending on the education provider and the teacher. Formal assessment is not

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([29]) Source: Cedefop; N=73. Only those programmes in which digital competence is assessed were analysed.

carried out in some programmes, as in the French programme for services in hotel, catering and coffee shops.

Written and oral tests are usually applied to assess student performance in the learning process. In most programmes, students are required to pass the respective subjects to access to the final examinations, as is the case in:

(a) restaurant/bar technician programme, Italy;
(b) programme for tinsmith-roofer, Slovenia;
(c) programme for bricklayers and cooks/waiters, Czechia;
(d) three programmes, Croatia and Cyprus.

The programmes for mechanical operator welding-carpentry and construction operator (bricklayer/carpenter) in Italy have an initial assessment test then digital competence evaluations throughout the three-year programme, with different tests for professional and technical skills. In Bulgaria, a national external assessment in digital competence was introduced for all upper secondary education students after completing the tenth grade.

Digital competence is frequently assessed in work practice, for example, in the programme for cutting mechanisms in the German-speaking Community of Belgium in an assignment to demonstrate skills in technical drawing. In the Dutch manager waiter/waitress qualification, digital competence is assessed through observation in work-practice, as stated in the qualification profile.

An example of assessment by an examination board is the Austrian apprenticeship programme on welding. During the final apprenticeship examination, digital competence is assessed in a written examination, with a small part devoted to simple programming commands. In the final practical examination before the examination board for the Croatian bricklayer programme, a student must create documentation on a computer for a specific task. In the Hungarian machine manufacturing technological technician programme, digital competence is assessed in the vocational examination and included in the vocational examination tasks.

Other methods for assessing digital competence are found in the three Romanian programmes, in which the VET methodology states that key competences are assessed in integrated technical learning outcome units. In the Spanish technician in construction, digital competence is included in professional modules and assessed together with the content of these modules. At the same time, digital competences are generally delivered and assessed in work practice in the classroom. In the diploma in joinery and furniture-making offered by the Malta College of Arts, Science and Technology, digital competence is assessed in practical work on the computer. This is augmented by a project that involves

students producing some form of digital output, such as the design of a PowerPoint Presentation, design of a leaflet, or business Facebook page.

3.3.3. Teacher/trainer competences

Key messages:

- Most teachers of digital competence have a higher education degree (77%) in education, informatics or a related discipline (such as mathematics) or in the subject area of the programme.

- In 14% of all programmes, teachers of general or occupation-specific subjects are not required to have education and training in digital competence but are assumed to be capable of using digital tools in their teaching practice.

- Given that digital competence is mostly integrated in other modules, many programmes have no specific requirements for teachers to acquire digital competence. Most teachers are expected to handle a computer and the software used in their occupation area. Beyond this, it is up to individual teachers whether they participate in further training focusing on use of interactive forms and methods in the education process.

Most often teachers of digital competence have a higher education degree (77% of all programmes) in the following fields: education, informatics or a related discipline (such as mathematics), or in the subject area of the programme. Often, a higher education degree (other than in the education field) must be accompanied by pedagogical studies. In some programmes, professional experience and teacher induction period are also required. Teachers/trainers who deliver digital competence in their subject area often are not required to undergo specialised training in digital competence (no specific requirements 14%) but are assumed to be capable of using digital tools for their teaching.

In some cases, CPD is available to acquire/upgrade digital competence but whether it is used depends on the individual teacher and/or national regulations.

Box 15.   **Examples of digital competences of teachers/trainers**

Denmark, programme welder (blacksmith): Mr MJ (over 35 years) has training as a blacksmith/welder, has several years of practice experience and has postgraduate training in teaching. He has a special interest in digital technologies and follows new trends but has not done continuing education courses on digital competence.

Norway, programme bricklaying (trade certificate): in addition to his trade certificate and work experience, Mr OS has qualifications to teach some of the common core subjects, such as Norwegian, mathematics and English, in addition to

the trade-specific subjects. This has enabled him to adjust the common core subjects he teaches to the needs of VET students, particularly digital competence. He recognised that many VET students in Norway lack motivation for the common core subjects, particularly writing. When included in the trade-specific learning outcomes, the common core subjects offer an opportunity for digital competence inclusion in teaching activities. Digital tools (such as learning platforms adjusted to the needs of VET) facilitate including trade-specific competences in the common core subjects.

Slovakia, programme waiter/waitress: Mr RM has taught at the school for more than seven years. He majored in general pedagogy for students from fifth to twelfth grade (elementary school and first two years in secondary school). He has several certificates in information and communication technologies and regularly attends additional education and vocational courses. Before he became a teacher in this school, he worked in private ICT companies and at elementary school (subjects informatics, physics and technical education). Currently, he works as a teacher and as a network administrator. He teaches Informatics in all programmes at the school.

Source: Cedefop.

3.3.4. Digital competence inclusion as a 'pure' key competence or as an occupation-specific competence in VET programmes

Key messages:
- In 47% of programmes, digital competence is a 'pure' key competence. In 27% of programmes, it is seen as an occupation-specific competence. In 18% of programmes, digital competence is perceived to be both.
- In the manufacturing sector, digital competence is more often perceived as an occupation-specific competence (41% of programmes) compared to 26% in the accommodation and food service sector, and 16% of programmes in the construction sector.

In half of the programmes (47%), digital competence is a pure key competence (relevant for all people to work and live in the 21st century). In 27% of programmes, digital competence is an occupation-specific competence. In 18% of programmes, digital competence is both key and occupation-specific, while in 5% of the programmes it is not delivered. In 3% of the cases, digital competence is neither a 'pure' key competence nor an occupation-specific competence as it is not linked to the occupation-specific practice and is also not viewed as a 'pure' key competence to function in society (Figure 17).

Figure 17.   **Digital as a key or occupation-specific competence**
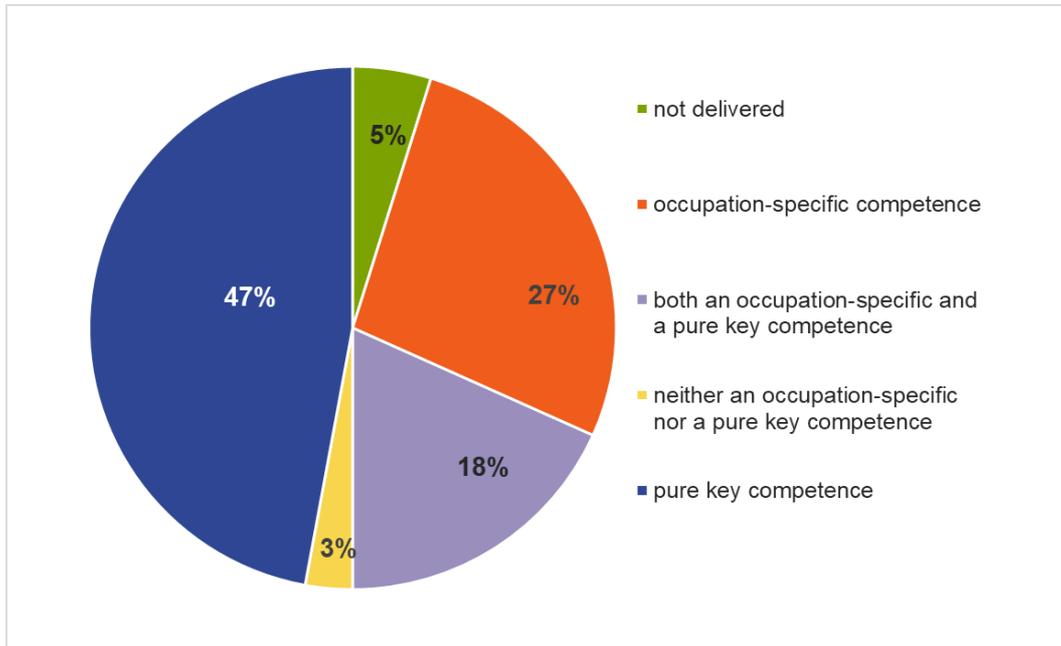
NB: N=104 programmes; 1 programme not applicable.
Source: Cedefop.

Examples of digital competence as occupation-specific are found in three Spanish programmes. It is argued that digital competence taught in a VET degree programme is mostly related to occupation-specific tasks, and that the applications/programmes are used in the respective profession. The same is said of the Danish welder (blacksmith) programme in which digital competence is seen as being linked to the occupation-specific practice. ICT is used for most of the work (making drawings, seeking information, and planning assignments) and increasingly education and the welder's job (blacksmith) is becoming digitised. Digital competence is seen to be important for the occupation-specific practice.

The diploma in joinery and furniture-making programme offered by the Malta College of Arts, Science and Technology includes digital competence as 'pure' key competence. Although mainly taught in context, students develop digital competence in examples related to their work. The competence is not considered essential to the job, even if it can enhance capabilities at work in using digital media including Facebook and emails. Another example of a 'pure' key competence is the Norwegian waiter/waitress programme. Waiters/waitresses need to have detailed knowledge of the food they serve and are also increasingly dependent on digital tools (digital payment and reservation systems). But as appropriate attitudes and social skills are essential for becoming a waiter, digital competence is not considered to be a core competence for this occupation.

The boundary between occupation-specific and 'pure' key competence is not so clear in some programmes. In Portugal, digital skills are currently essential for all construction technician programmes, found at two levels:

(a) key digital competence in productivity software (word processor, spreadsheet, graphical presentation utility) that are essential in the daily tasks of construction workers;

(b) digital skills for the profession, such as competences in using computer aided design software.

Digital competence can be both key and job-related.

There are few differences in digital competence in the curricula of the three sectors (Figure 18).

Figure 18.   **Digital as a key or occupation-specific competence by sector**
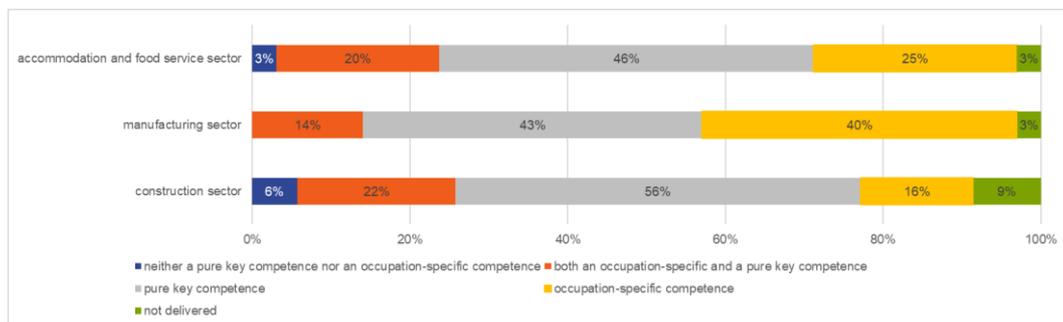
NB: N=104 programmes; 1 programme not applicable.
Source: Cedefop.

In the accommodation and food service and the construction sectors, digital competence is included as a 'pure' key competence in almost half of the programmes examined. This may be the result of the qualifications selected but in all three sectors, digital competence is generally becoming increasingly important. However, digital competence is still not considered an occupation-specific competence in most programmes. Only welding and related occupations in the manufacturing sector show a higher requirement for digital competence (40%). This makes sense because the manufacturing sector has traditionally been at the forefront of technology development in manufacturing. New technologies (3D printing, included sensors and internet of things) will increasingly change production and distribution chains (Brown and Satyavolu, 2017).

3.3.5. Extent the formal EU definition of digital competence is reflected in reference documents linked to individual programmes

Key messages:

- Definitions of digital competence in reference documents such as laws, qualification standards and framework curricula (related to the individual programmes explored) differ considerably between the countries and VET systems reviewed.

- In more than two-thirds of programmes, national digital competence definitions reflect either fully or partly the EU definition included in the recommendation on key competences for lifelong learning. No pattern is identified as to whether programmes in the three sectors focus on different aspects of the EU definition. This may be explained by the fact that many individual programmes are aligned with a core curriculum or other reference documents that define digital competence. Also, digital competence is sometimes integrated in general subjects that are not sector-specific.

According to the recommendation on key competences, 'digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking' (European Commission, 2018a). The extent to which the EU definition is reflected in sector IVET programmes is presented in Figure 19.

Figure 19. **Extent to which the EU definition of digital competence is reflected in reference documents linked to individual programmes per sector**
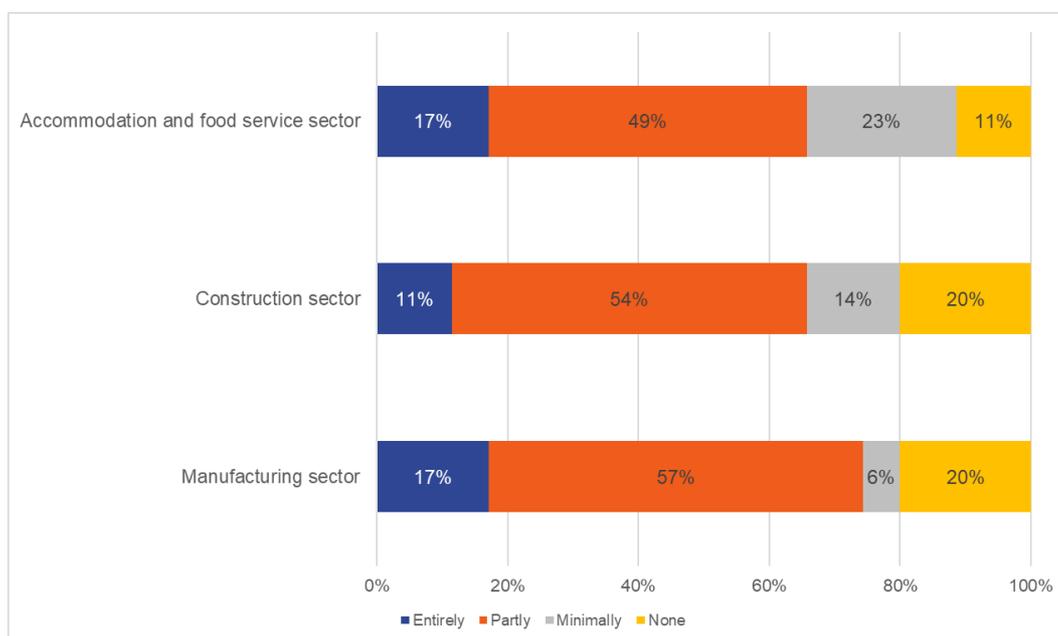
NB: N=105 programmes. Entirely = all elements of the EU definition are found; partly = elements of the EU definition but with national variations; minimally = very few elements of the EU definition; none = no elements of the EU definition.

Source: Cedefop.

In the accommodation and food service sector, 17% of programmes have statements in the educational, occupational standard and/or other reference documents of the programme that fully reflect the EU definition.

Two examples of definitions of digital competence in reference documents for programmes in the accommodation and food service sector are presented in Box 16.

Box 16. **Definitions of digital competence in education and occupational standards and/or other reference documents that reflect the EU definition in the accommodation and food service sector**

German-speaking Community of Belgium: In the reference document (framework plan [*Rahmenlehrplan*]), digital competence is divided in several areas:

• Competence area operation/application: students apply advanced features from word processing, spreadsheet, presentation, and image editing applications;

• Competence area informing/researching: students define and limit a suitable topic for a final work;

• Competence area produce/present: students develop and structure a project plan for the creation of the final work as text, sound, image and/or video production;

• Competence area analyse/reflect: students analyse and evaluate media-mediated role and reality ideas; students examine the influence on the production and dissemination of media offers in general and in particular on the regional press organs;

students apply the basic rules of newspaper and news analysis to specific examples; students analyse the economic and political importance of the mass media in their historical development; students analyse and recognise the influence of the media in opinion forming in a democratic society and how they can contribute themselves.

Hungary: The reference document (general framework curriculum for vocational secondary schools) includes the main aspects in the definition. Learners can provide a sophisticated, aesthetic, self-employed application of the computer (word processing, spreadsheets, presentation) in learning and everyday life. Learners are open and motivated to take advantage of ICT opportunities. They are involved in information sharing; able to participate in collaborative networks of their interest in the chosen field of expertise. Acknowledge and use of the opportunities offered by ICT for tasks and solutions that require creativity and innovation in solving problems related to their own field of expertise. Learners develop the correct approach to ICT application and accept the ethical principles of communication and information usage. Recognise the dangers associated with the interactive use of ICT, consciously seek to mitigate these. Learners are aware of the legal principles of copyright and software ownership and take them into account when using digital content.

Source: Cedefop.

Programming is the least-covered aspect in the IVET programmes investigated in the accommodation and food service sector that partly meet the EU definition. Often, terminology other than digital competence is used that is mainly related to ICT.

In the construction sector, 11% of IVET programmes fully reflect the EU definition. An example of digital competence definition in the VET standard for construction sector in Finland is presented in Box 17.

Box 17. **Explicit formulation of digital competence in the VET standard for construction sector (Finland)**

As described in the competence unit Functioning in digital environment, general compulsory competence aims (targets for assessment) are: 'the student knows how to use most common equipment for information- and communication technology and makes related choices: knows how to use digital services and applications'. Further, more detailed criteria are defined for each assessment target and each competence level. For example, the assessment target 'the student knows how to use digital services and applications'; at level 1, 'the student applies guidelines and instructions related to the information security and data protection'; at level 3, 'the student uses digital services and application in his/her work assignments'; at level 5, 'the student uses and shares versatile digital contents in accordance with copyright regulations'.

Source: Cedefop.

The EU definition of digital competence is partly met in 54% of VET programmes in the construction sector. This is mainly because most programmes have a focus on digital competence for professional requirements and less

coverage is given to aspects such as cooperation and collaboration, digital content creation, digital well-being, cyber security, problem solving, data literacy or safety.

In the manufacturing sector, the EU definition is fully covered in the reference documents of 17% of VET programmes. In Box 18, an example from Germany is presented of how digital learning outcomes are set out in the reference document for the construction mechanic where the EU definition is fully met.

Box 18.   **Example of definition of digital competence in educational and occupational standards and/or other reference documents in the construction mechanics programme (Germany)**

Learning outcomes related to digital competence in the introductory part of the Bavarian framework curriculum include: students work team-oriented and apply actual communication tools also in the virtual space; students plan their tasks according to technical documents also by using digital tools; students consider data and information security linked with digitisation of the world of work; students research and evaluate information sources and information also in digital networks; students create auxiliary constructions […] also by using digital media; or students conduct maintenance work for facilities, machines, and tools also by using digital information sources. Digital competence is included in most of the vocation-related modules as well.

Source: Cedefop.

The EU definition of digital competence is partly reflected in 57% of programmes in the manufacturing sector. Not all elements in the formal EU definition are fully covered; omissions can include critical and responsible use of digital technologies, digital content creation, data literacy, programming, safety or cybersecurity.

CHAPTER 4.
Multilingual competence in IVET

According to the 2018 Council recommendation, multilingual competence 'defines the ability to use different languages appropriately and effectively for communication. It broadly shares the main skill dimensions of literacy: it is based on the ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of societal and cultural contexts according to one's wants or needs. Languages competences integrate a historical dimension and intercultural competences. It relies on the ability to mediate between different languages and media, as outlined in the Common European framework of reference for languages (CEFR). As appropriate, it can include maintaining and further developing mother tongue competences, as well as the acquisition of a country's official language(s)' (European Commission, 2018a). The 2018 Council recommendation emphasises the importance of learning languages as a tool for communication in multilingual societies and work environments. The focus on communication in foreign languages has now moved to improving linguistic competences and communicating across borders. This shift has been triggered by the perceived ambiguity in the term foreign language and the need to increase the level of learners' language competences in both official and other languages relevant to their working and living situation that may contribute to cross-border communication and mobility (European Commission, 2018a).

Being linked to multilingual competence, language competence was addressed in 2002 in the Barcelona objective. This target called on Member States to step up efforts to achieve a competitive, knowledge-based economy by promoting competence in mother tongue communication, and in two other languages for all citizens (Council of the European Union, 2002). It was reaffirmed by a European Commission communication setting out steps to ensure multilingualism is mainstreamed in EU policies, with the aim of achieving the Barcelona objective (European Commission, 2008).

A Commission staff working paper accompanying *Rethinking education: investing in skills for better socioeconomic outcomes* highlighted the importance of language competence for employability, mobility, and growth in Europe (European Commission, 2012b). The paper identified language competence as a key dimension in modernising European education systems, supporting worker and student mobility, and the employability of the European workforce. According to

this working paper, language competence should be useful in everyday life and match labour market demands.

According to Cedefop, participants in upper secondary VET learned more than one foreign language in 18 of the 28 Member States in 2012, with the highest number of languages learned in Luxembourg, Poland and Romania. In 2014, students in IVET learned on average less than one foreign language in Belgium, Denmark, Germany, Lithuania, the Netherlands and Hungary (Cedefop, 2015). Data show that, at EU level, 34.5% of the total number of VET students in upper secondary education learned two or more languages in 2014. This percentage was nearly 20 points lower for VET students than for students in general education (EuropoeanCommission/EACEA/Eurydice, 2017). These statistics show the different emphasis on language competence between VET and general education.

In May 2019, the Council adopted a recommendation on a comprehensive approach to the teaching and learning of languages (Council of the European Union, 2019). This recommendation focused on language teaching and learning in compulsory education (covering both general and vocational schools) and recognises that Member States should progress faster towards the goal agreed at the Barcelona European Council in 2002. It recommends that Member States explore ways to help all young people to acquire proficient user level in at least one other European language before the end of upper secondary education and training; apply comprehensive approaches to improve teaching and learning of languages; and ensure that all sectors of compulsory education and training are addressed. It also asks for support for teachers and trainers and for research and monitoring and improved reporting on experience and progress.

4.1.   National policy

Key messages:
- Between 2011 and 2018, all but eight EU+ countries adopted and started implementing policies that promoted multilingual competence in IVET. A total 41 policies promoted multilingual competence but only four focused only on this key competence. These policies range from those focusing exclusively on IVET and multilingual competence to those that cover the whole education sector and multiple key competences.
- Most (18 of 41) policies that promote multilingual competence in IVET are strategies, generally with an agenda-setting purpose and presenting longer-term visions rather than short-term, practical implementation plans.

- In the reference period (2011-18), most policies were adopted in 2014 (11 policies). This peak is also linked to the EU policy planning schedule (2007-13; 2014-20).
- Half (51%) of the 41 policies refer to EU or international initiatives, such as CEFR and the Council recommendation on key competences for lifelong learning. Such references set the scene or have a direct effect on policy content.
- Most policies (67%) adopted in 2011-15 have successfully completed implementation of anticipated activities. More recent policies (2016-18) are more often still in an implementation phase (37% completed) but may already have contributed with partial results. Policies that did not complete the activities as planned are rare (3% of policies until 2015, none thereafter).
- Of the 41 policies, 23 seek to embed multilingual competence through programme delivery, 16 focus on reference documents ([30]), 12 on teacher/trainer training, and 12 on revising assessment standards. Most focus at the same time on more than one of these areas, underlining the importance of integrated, holistic policies. A total of 17 policies promote literacy competence but do not aim to embed it.

4.1.1. National policies promoting multilingual competence in IVET

The study identified 79 national policies that promote literacy, multilingual and/or digital competence in IVET, as shown in Figure 20.

([30]) Reference documents are education and occupational standards that include learning outcomes descriptions and/or educational objectives.

Figure 20. **National policies promoting literacy, multilingual and digital competences: focus on multilingual competence**

In total: 79 policies identified
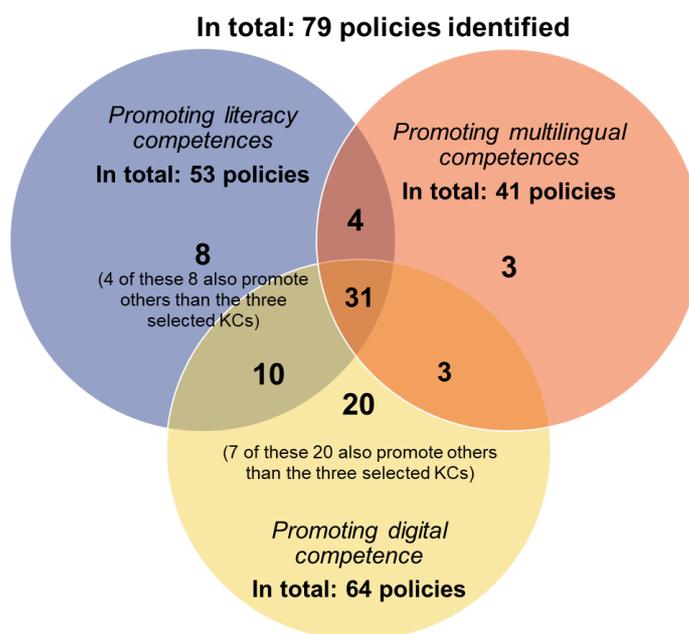
NB: N=79.
Source: Cedefop.

Figure 20 shows how many policies promote each of the three studied key competences. In the period 2011-18, 41 national policies promoting multilingual competence in IVET were initiated and implemented. They often promote more than one key competence; 31 of them promote all three studied key competences at once. For the purpose of presentation, the figure does not include how these policies also mention additional key competences (cultural awareness and expression, personal social and learning to learn, mathematical competence and competence in science, technology and engineering, citizenship, and entrepreneurship), but such overlaps are equally common ([31]). A closer look at these 41 policies promoting multilingual competence further reveals their diversity, for instance in terms of scope, coverage and objectives.

First, the scope of what key competences policies promote varies substantially. Many promote multiple key competences and only three policies are limited to multilingual competence without promoting literacy and digital competences. These three policies also exclusively promote multilingual competence, without mentioning any other.

([31]) For instance, among the 31 policies that address all three key competences under study, 22 policies address all eight key competences.

Second, some policies were designed exclusively for IVET while others address the entire education sector, without mentioning IVET specifically. The latter category is equally relevant to this study, as these may also result in changes to how key competences are perceived, taught and assessed in IVET.

Third, the objectives of the policies vary substantially. While the selected policies all promote key competences in IVET, they seek to do so in a variety of ways. This study distinguishes between policies that promote key competence(s) and those also embed them. The first are mostly focused on raising national awareness of the importance of multilingual competences, or more specifically increasing attention paid by the general public, students or education providers to it; the latter have the explicit objective of increasing the extent to which literacy competence is included in IVET having a visible effect on reference documents ([32]), programme delivery, teacher/trainer training and assessment standards.

These key characteristics in which the selected policies vary are summarised in Figure 21.

Figure 21.   **Key characteristics of policies promoting multilingual competence**
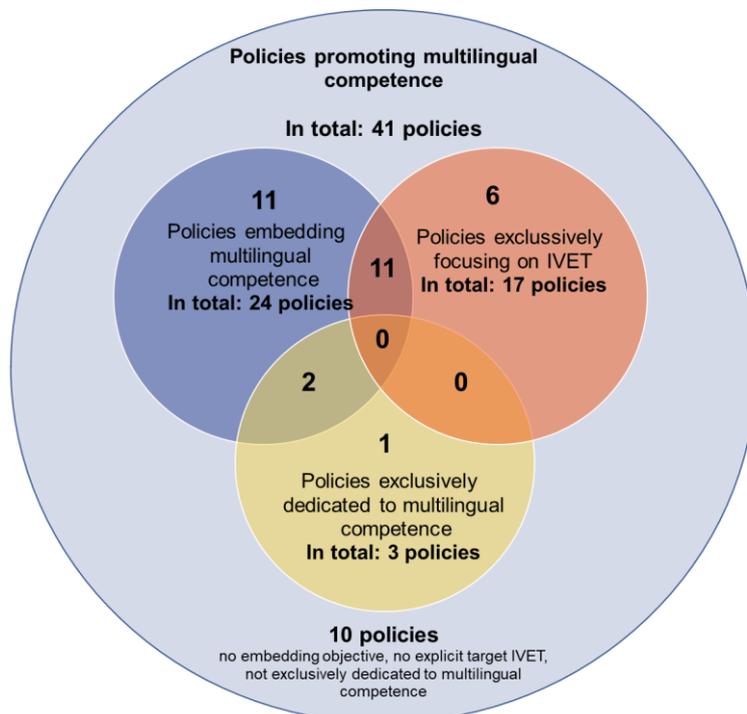
NB: N=41; all policies that focus on multilingual competence.
Source: Cedefop.

([32]) Reference documents are the generic term for education and occupational standards, including the descriptions of learning outcomes and/or educational objectives.

Of the 41 policies, 17 exclusively focus on IVET. The rest target the entire secondary education sector (including IVET) and may even cover the higher education sector or pre-school and primary education sectors. For instance, the Czech *Operational programme for research, development and education* addresses key competences from the perspective of increasing equal access to high-quality pre-school, primary and secondary education.

Most of these policies (38 of 41) target multiple key competences, with only three exclusively dedicated to multilingual competence. An Austrian directive that regulates financial support for dual training offers specific support to employers with apprentices that have special needs in mathematics, German (literacy), or English language skills (multilingual competence). The Finnish vocational upper secondary education and training Act, as approved in 2014 also adopts a broad view of key competences, including references to all eight key competences.

A total of 24 policies aim to embed multilingual competence. The remaining 17 policies promote multilingual competence without defining concrete actions to impact visibly the way key competences are included in IVET; for instance, they can be broad lifelong learning strategies or broader VET reforms ([33]).

Box 19. **Policy embedding multilingual competence**

Content and language integrated learning (Flemish Community of Belgium)
Following the adoption of the Education Decree XXIII of 19 July 2013, Flemish secondary schools and centres for part-time education started introducing Content and language integrated learning (CLIL) as from 1 September 2014. CLIL is offered in a language other than the official language of instruction. The legislator defines CLIL as 'a working method in which French, English or German is used as the language of instruction to teach a non-language subject'. A pilot project examined the potential of introducing CLIL into Flemish secondary education. Under the scientific guidance of KU Leuven, nine secondary schools experimented with the CLIL methodology between 2007 and 2010. An expert panel evaluated the pilot project in 2010 and concluded that there were enough positive indications to introduce CLIL in secondary schools. The findings were included in a policy advisory memorandum from the Department of Education for the decree. In total, 23 schools offered CLIL in the school year 2014/15, and the number of schools has since grown to 61. The CLIL project has been running for two school years in Flemish secondary schools and

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([33]) Consider, for instance, a broad IVET reform policy that restructures the way in which learning outcomes are defined. Because of such a policy, learning outcomes that describe key competences will also be affected, just like any other learning outcome. If the policy did not define specific actions for key competences (that set it apart from other types of learning outcomes), a policy is not considered to be explicitly embedding literacy competences. In these cases, any changes to key competences in IVET are an indirect by-product of the larger anticipated change and are not an explicit policy to revise embedding of literacy competences in IVET. Also refer to the analytical framework (Chapter 1), where this distinction is further defined.

influences how modern foreign language competences are taught in secondary education including VET.

Source: Cedefop.

Box 20.   **Policy not embedding multilingual competence**

Framework for the education strategy for Malta 2014-20: sustaining foundations, creating alternatives, increasing employability (Malta)

The framework was launched to state the government's long-term view and objectives in education. It is called a framework as the policy is written at high level, providing a holistic vision, but does not provide specific actions for implementation. As a framework, all other published policies in education need to be within this framework, target specific aspects, and indicate what actions are to be taken. For multilingual competence, the policy acknowledges that the education system needs to promote the national identity through the mastery of the Maltese language. It also makes specific reference to proficiency in the English language. There is also the recognition of value of foreign languages and encouragement to young people to learn and become competent in other languages, particularly those which serve to ensure global outreach. Due to its holistic overview, specific reforms and actions cannot be linked to the Framework, as these are covered by the policies which were subsequently drawn up based on this policy document.

Source: Cedefop.

An overview of policy types that promote multilingual competence in IVET is presented in Figure 22.

Figure 22.   **Type of the policies that promote multilingual competence in IVET**
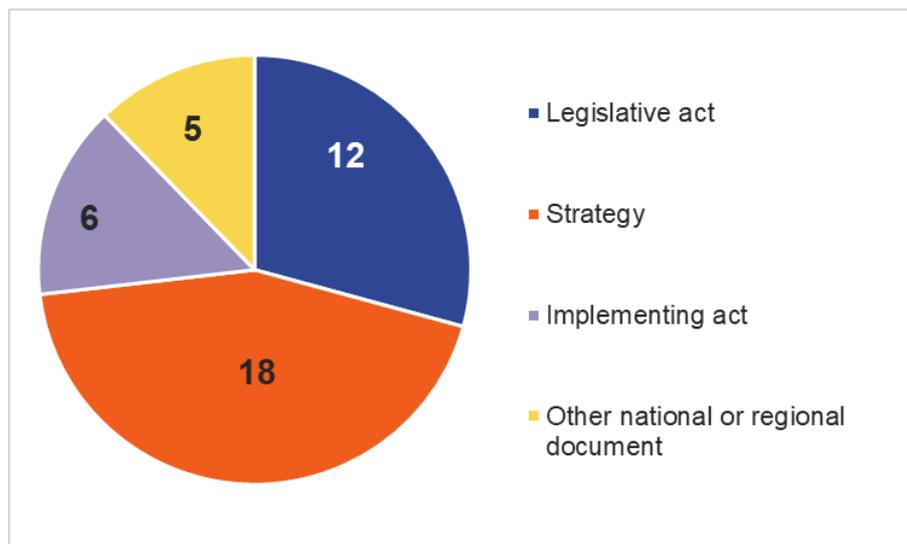
NB: N=41.
Source: Cedefop.

Most policies are characterised as a strategy. Compared to legislative acts and implementing acts, strategies generally have an agenda-setting purpose and present longer-term visionsilk instead of short-term, practical implementation plans. This affects how objectives and envisaged results are phrased. Examples of a strategy and an implementing act are presented in Box 21.

Box 21. **Examples of a strategy and an implementing act for promoting multilingual competence in IVET**

Strategy: Hungarian VET in service to the economy from 2015 (Hungary)
This broader strategy includes specific objectives on language learning in IVET, broadening the scale of training opportunities; launching programmes at national level to develop digital and foreign language competences; and introducing incentives to facilitate participation of adults in vocational or language learning (through financial support or working time reduction).

Implementing act: policy on changes to the examinations and qualification decisions in VET (2011, plus changes between 2010 and 2018) (Netherlands)
VET examinations in general subjects (Dutch, maths, civic education and English) have been centralised and reference levels introduced for those subjects. This means some examinations are no longer organised autonomously by schools. Further changes enable candidates to take examinations at a higher level than the obligatory, for example, English at VET level 4.

Source: Cedefop.

Most policies promote multilingual competence in IVET from a broader societal perspective. The main societal objectives attached to the 41 policies are presented in Figure 23.

Figure 23. **Policies promoting multilingual competence by main societal objective**
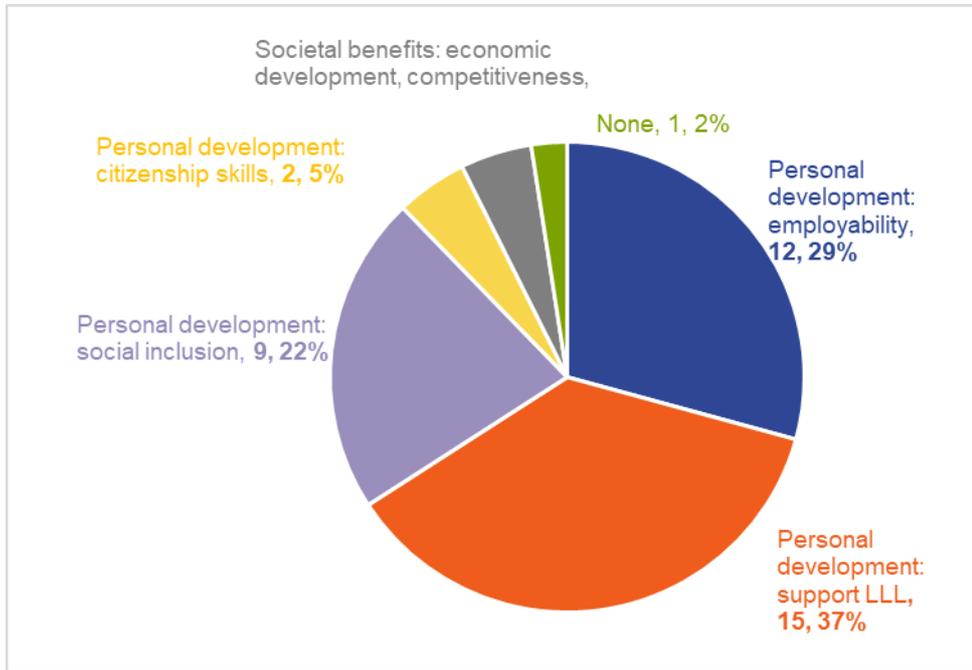
NB: N=41; all policies that focus on multilingual competence.
Source: Cedefop.

Most policies promote individual benefits for citizens, such as increasing:
(a) student engagement in lifelong learning (37%);
(b) employability prospects (29%);
(c) social inclusion (22%).

Increasing citizenship skills, including the capacity to participate in modern-day democracies, is another overarching objective that underpins the logic of two policies promoting multilingual competence (5%). Another two policies (5%) did not define overall objectives for individuals but set an objective at an overarching level, aiming to contribute to economic development, competitiveness and innovation.

4.1.2. **Year of policy adoption and EU references**

An overview of policies that address multilingual competence in IVET by year of adoption is presented in Figure 24. A distinction is made between policies that promote multilingual competence (blue line) and policies that also aim at embedding multilingual competence in IVET (24 policies identified: orange line).

Figure 24. **Number of policies that promote multilingual competence in IVET by year of adoption**
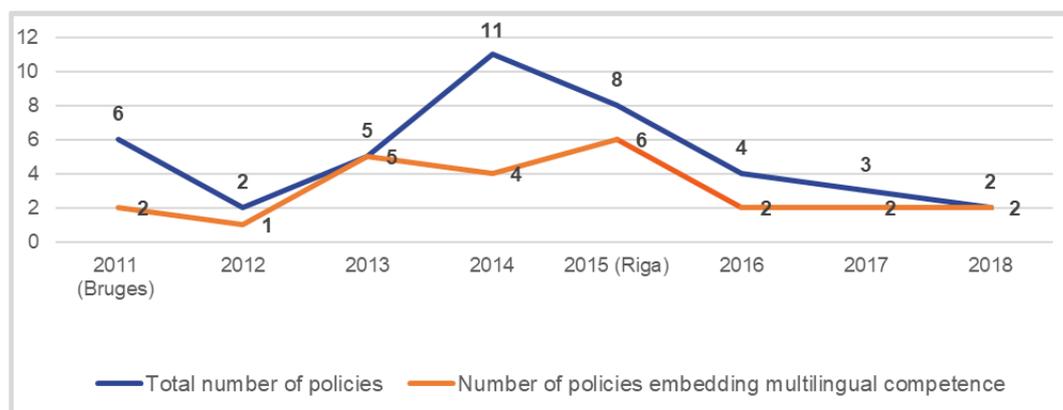
NB: N=41.
Source: Cedefop.

In the reference period (2011-18), most policies were adopted in 2014 (11 policies), followed by 2015 (eight policies). The number of policies with an explicit focus on embedding multilingual competence has remained stable. The peak in in 2014 was linked to the EU policy planning schedule (2007-13; 2014-20). Examples include:

(a) Bulgarian strategy for lifelong learning for 2014-20;
(b) Cyprus national strategy for lifelong learning 2014-20.

There is no hard evidence that the policies on embedding multilingual competence are specifically inspired by the 2015 Riga conclusions. A total 21 policies (51%) refer to EU or international initiatives. For multilingual competence, reference is made to the EU 2020 strategy, CEFR and the Council recommendation on key competences for lifelong learning. Reference is also made to the European Network of Public Employment Services and the ELGPN, along with the work of other organisations, such as Organisation for Economic Cooperation and Development (OECD). References to EU or international initiatives usually set the scene for the policy, put policies in a wider context, and create momentum for working on multilingual competence in IVET. Some policies are mainly based on EU and international initiatives, especially CEFR. Examples of policies and references to EU initiatives are presented in Box 22.

Box 22.   **Examples of policies with references to EU initiatives**

Circular No 2015-173 The map of modern languages of 20.10.2015 (France)
In September 2016, the new pedagogic organisation of the college introduced a
second modern foreign language. The new language programme was designed with
reference to the CEFR.

Languages connect, **Ireland's strategy for foreign languages in education 2017-
26 (Ireland)**
The strategy acknowledges the CEFR for measuring language proficiency. The
consultation process revealed that employers did not understand the competence
levels of graduates in foreign languages. The strategy stated that promoting the use
of CEFR could assist employers to articulate better their language requirements and
ensure a better match between employer requirements and graduate qualification
requirements. The strategy recommended that all applicants for teaching foreign
languages should submit evidence of minimum CEFR levels in all language skills.

Source: Cedefop.

The time frame of policies also has an obvious impact on the extent to which
their activities were implemented at the time this study was concluded (2019). As
shown in Figure 25.   , two-thirds (67%) of policies addressing multilingual
competence have (largely) implemented the activities as planned, against 30%
that are still in the process of implementation. Activities are implemented as
planned in 37% of policies adopted after 2015, while 63% are still in process. One
policy was not implemented entirely as planned. It consists of concrete activities to
adjust the provision of language skills to working life needs. It planned to set up an
ICT system involving employers and school representatives, but this had not been
completed as it was considered too bureaucratic by participants.

Figure 25.   **Multilingual policy implementation**
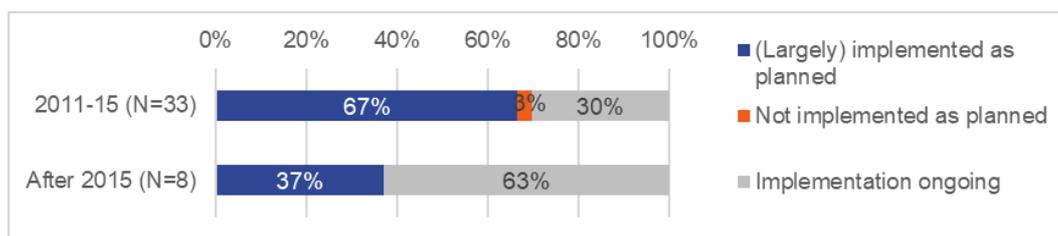
NB: N=41.
Source: Cedefop.

4.1.3.   **Policy focus areas**
Policies embedding multilingual competence in IVET do so through four
interrelated areas: reference documents (education and occupational standards);
programme delivery; teacher/trainer training; and assessment standards. The

scope of each of the policies that explicitly defines at least one area to embed multilingual competence in IVET is mapped in Figure 26. The four coloured rectangular shapes represent each of these four areas, with the resulting individual boxes representing the number of policies that show overlaps.

Figure 26.   **Intervention areas of national policies embedding multilingual competence**
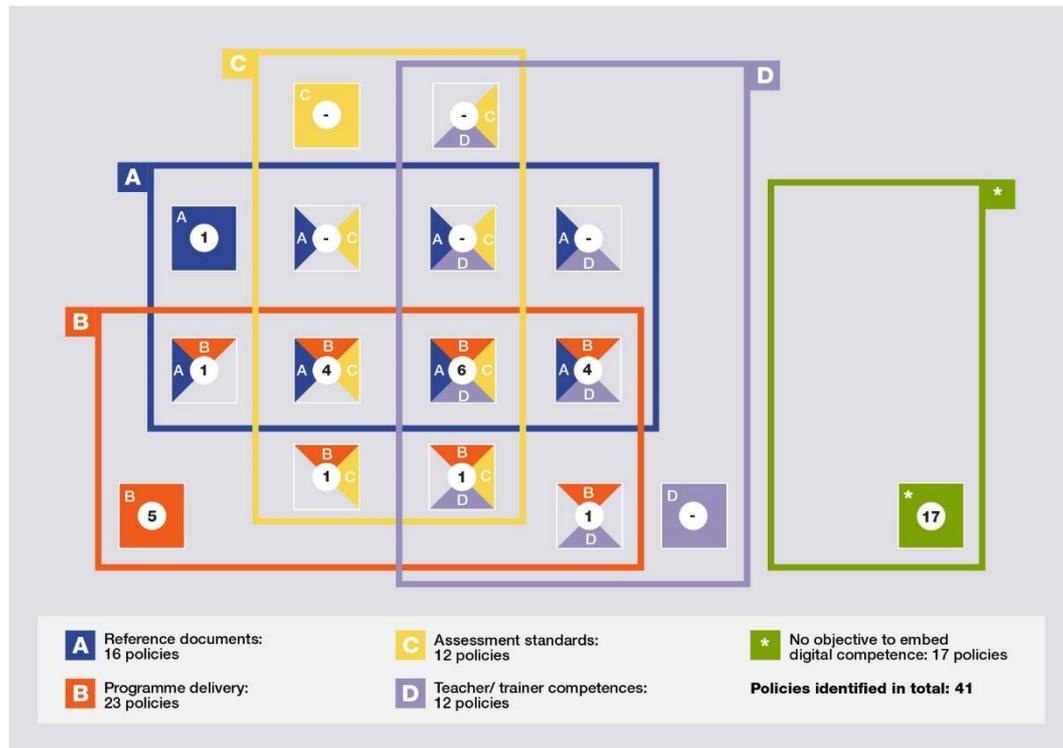
NB: N=41.
Source: Cedefop.

16 policies aim to embed multilingual competence through revising reference documents (blue area A). 23 affect programme delivery (orange area B), which is the most common area of focus: the figure shows considerable overlaps between policies that address both (14 policies). Policies that seek to embed multilingual competence through teacher/trainer training (12 policies, violet area D) and by revising assessment standards (12 policies, yellow area C) are less common. 17 policies did not aim to embed multilingual competence.

In practice, most policies aimed to embed multilingual competence in more than one area. Six aimed to embed multilingual competence in all four of these areas. An example of a policy that focuses on all four dimensions is the Estonian lifelong learning strategy 2020, which guides the most important developments in education. This focuses on multilingual competence by promoting Estonian for Russian-speaking population and vice versa.

4.1.3.1. *Programme delivery*

23 policies seek to embed multilingual competence by changing the delivery of IVET programmes. Within this group, two main categories of policy can be identified. Most introduce new subjects and ways of delivery or set a minimum number of hours for multilingual competence (15 out of the 23 policies, 65%). For instance, the Estonian *Vocational education programme 2018-21*, developed as part of the *Estonian lifelong learning strategy 2*020, lists how VET providers should promote foreign languages and evaluate progress in programme modules. The remaining eight policies (35%) propose changes to the delivery of IVET programmes more indirectly, through the development of national guidelines or framework curricula. These policies have the same objective as policies that change curricula directly but allow more freedom at the local and/or provider level to interpret how key competences are reflected in programmes. In Belgium for instance, the Flemish Community Government introduced CLIL in 2014, allowing schools to offer courses in a language other than the official language of instruction. Within some limitations, schools can decide whether courses are offered in a different language. In Iceland, the National guide on curriculum for upper secondary schools, introduced in 2011, combines curriculum guides, which schools need to make visible in learning and teaching, working methods, organisation and their development plans. It includes a foreign language course as a general subject.

The success of these policies is measured by the extent to which they result in actual changes in the delivery of IVET programmes. An assessment found that 78% of the policies (18 out of the 23) show observable changes in the delivery of programmes. This does not mean that the remaining five policies were not successful; changes to IVET programmes may be subtle, may take place gradually, or a policy may be limited to voluntary guidelines that leave it up to VET providers to shape such changes. This last category is particularly relevant, as IVET providers have increasing autonomy to design programmes (Cedefop, 2018, p. 114). This autonomy is generally given within a national framework curriculum, often further limited by the reference documents (education and occupational standards), and with due respect to assessment standards. Provider autonomy should be balanced with the desire to introduce foreign language subjects and revise courses in IVET programmes. Doing so successfully depends on the local context, but this study shows that targeted action from the national level is always necessary.

4.1.3.2. *Reference documents (education and occupational standards)*

A second group of policies seeks to embed multilingual competence in IVET through revision of reference documents of IVET qualifications (16 policies). They are split into two broad categories. A first category consists of most policies and includes those that develop or revise learning outcomes or educational objectives, to improve multilingual competence in IVET (69%: 11 out of the 16 policies). For these policies, the revision of multilingual competence in the reference documents is the primary objective; it is structured by a formal competence framework in which multilingual competence is further defined and clarified, generally using the same structure as the CEFR. Subsequently, these are translated to specific learning outcomes that are applied to individual qualifications. In the German-speaking Community of Belgium, for instance, the 2015 decree amending the 2008 decree on core competences introduced requirements for IVET learners on French language skills in reference documents. A second category of policies embeds multilingual competence in IVET through revising reference documents while restructuring the broader IVET system (31%, five policies). These policies consist of broader reforms for the IVET sector (such as the introduction of a learning outcomes approach or revising reference documents to take better account of modular learning), which also offer an opportunity to include new requirements for multilingual skills. In Slovenia, the guidelines for the preparation of VET instruction were renewed in 2016, and now require a certain level in a foreign language as part of the VET qualification.

National policies of both types can lead to changes to the description of multilingual competence in national guidance documents and frameworks. Through such structures, policies revise the formulation of learning outcomes at national level as included in reference documents. However, it often takes some time before such revisions have an observable impact on IVET, and such delays should not be understood as failures / challenges in policy implementation. The process of revising the specific content of individual qualification profiles and learning-outcome definitions tends to be done according to a fixed and more long-term schedule, and often involves social partners and school representatives. An example is the 2013 Organic Education Law in Spain, which highlights the importance of multilingualism and requires that students must be fluent in at least in one foreign language, favouring the use of a second and even a third foreign language. It reinforces general competences (versus job-specific competences) in the VET system but depends on schools and teachers to respond to these changed priorities and apply the contents of the law. It is up to the education inspectorates to supervise that the policy is correctly implemented, so qualifications are not

automatically updated with the new law, which is a longer process that follows a longer-term schedule.

4.1.3.3. *Teacher/trainer competences*

Policies recognise that teachers play an important role in increasing learners' multilingual competence (12 policies). To improve teachers' capacity to promote this competence, policies consider several possible approaches, ranging from additional in-service training (50%: six out of 12), revision of the requirements for new teachers (8%: one out of 12) and additional support in incorporating associated changes to the curricula through, for example, pedagogical guides (42%, 5 out of 12). In Poland, the *Human capital development strategy 2020* (2013) provided the framework for the modernisation of VET core-curricula on foreign languages (among others), set in law by ministerial decree in 2017. It also led to additional CPD requirements for language teachers in November 2018, given the persistent challenges in the recruitment of VET teachers.

In the short term, additional IVET teaching demands in terms of multilingual competence are often accompanied by policies consisting of setting up support structures for teachers. In France, the 2013 law on orientation and programming the reorganisation of schools introduced provisions for renewed pedagogical tools in teaching foreign languages. These policies are successful in the sense that they identified an important challenge in the capacity of VET schools and their teachers and set up the support structure to address this challenge. The importance of the capacity of VET providers to support their staff in implementing multilingual competence in IVET programme delivery is underlined in multilingual education in the Flemish Community of Belgium as discussed in Box 23.

Box 23.   **Content language integrated leaning (Flemish Community of Belgium)**

After an extensive pilot, an education decree on CLIL was introduced in 2013, enabling secondary education providers to offer subjects in languages other than the formal one. Requirements for schools to offer such programmes are relatively high, with limits to the proportion of courses offered in a foreign language, and with high demand for teacher language skills. Schools decide whether they offer CLIL, and there are no other incentives or budgets available to schools for this.

Uptake is voluntary but has been low in schools offering vocational education (BSO: 6) and technical education (TSO: 17) compared to those in general education (71). In the participating IVET schools, CLIL is a success. Students are more confident in speaking another language in the work context. In addition, the occupation-specific teachers and

trainers are enthusiastic and have indicated that they have improved their own foreign language skills.

However, the main reason for the limited involvement of vocational education schools is that it is challenging to offer CLIL for the following reasons:

1) VET has many different courses and low student numbers make the investment too high especially as the same course must also be offered in Dutch.

2) VET teachers and trainers (many of whom may be competent in the language of instruction) face challenges in obtaining a C1 certificate because of the academic writing style requirements.

3) The maximum 20% of the lesson time could pose challenges because practical courses usually take more than the 20%.

4) For the smaller VET courses, there is no commercial interest to develop learning materials in another language of instruction.

The underlying barrier is that the requirements are more attuned to general education and thus CLIL is less attractive for VET. However, CLIL should not lead to unequal opportunities.

Source: Cedefop.

4.1.3.4. *Assessment standards*

Key competence policies are also embedding multilingual competence into IVET through revision of assessment standards (12 policies). Two types can be identified: policies that introduce new exams focused on multilingual competence (17%: two out of 12 policies), and the remaining polices, which revise the standards of the existing assessment procedures (83%: 10 out of 12 policies). In the Netherlands, the decision on examinations and qualification (2017) includes specific provisions for schools to request a centralised examination in English language at higher CEFR levels, responding to the increased attention to English in VET programmes. Assessment of English language skills is also an examination component for all participants at level 4 (EQF level 4, middle management or specialist training) in secondary vocational education.

An evaluation of the policies in this category shows that they show visible results less often than policies focusing on other areas (only for six out of 12 policies was an observable change found). In some countries, this is explained by the way that IVET is organised. Control over assessment of IVET qualifications is often decentralised to schools or local employer boards. These local assessment boards may prioritise the assessment of occupation-specific competences over multilingual competence that is not occupation-specific. Note that this is not the case in all contexts; the Bulgarian School Education Act defines national examination programmes concerning IVET qualifications at the central level.

Initiated at the level of individual schools, regional qualification councils or at national level, policies that are successful in embedding multilingual competence in assessment standards tend to combine this with changes to either the reference

documents or the programme delivery. This underlines the importance of policies with a holistic approach.

4.1.3.5. *Policies not embedding multilingual competence*

Many policies promote multilingual competence without seeking to embed it in IVET (17 policies); these often comprise broad national policies. Their success should not be assessed based on the extent to which these policies result in changes in IVET. Several policies in this group introduce multilingual competence, clearing the way for more specific policy actions.

Key competences are often referred to in such policies but implementation in education is only a secondary, supporting and not further operationalised objective. Examples are the National lifelong learning strategy in Romania (adopted in 2015), and the Italian 2011 Agreement in State-Regions Conference, which covers the broad education sector and described an outline for professional qualifications and diploma competences. It seeks to propose a common framework for the various Italian regions to define competences in a similar way but does not define how it seeks to do so. How can we assess the effectiveness of such policies? The best measure of success would be to identify their follow-up actions, which is not always easy. Many of the policies in this category can be considered successful. The Framework for the education strategy for Malta 2014-20 led to more specific policies, such as the development of a national agency which will oversee the implementation of multilingual policy.

It is also possible that policies do not aim at embedding, but still have a certain effect on key competences in IVET. For example, the Finnish 2014 amendment to the Act on VET introduced key competences as essential element of all IVET qualifications in the mid-1990s, well before the Bruges communiqué. The policy sought to strengthen the learning outcomes approach and introduce a more modular qualifications structure. To do so, the already-defined key competences were revised to meet new requirements of the structure for IVET. The success of these policies should be measured by the extent to which they restructure qualification profiles, not the extent to which they embed multilingual competence (or other key competences), which had been done already before the policy was put in place. However, this does not mean that they will have no effect on embedding. The specific restructuring proposed and revising the way that qualifications are described contributes to an increase in the prominence of multilingual competence in qualification profiles.

4.2.   Multilingual competence in qualification types

Key message:
- In the 78 qualification types that comprise all IVET qualifications in the EU+
  countries, the most prominent way to include multilingual competence is as
  a stand-alone subject/module. Multilingual competence is not included in
  nine qualification types.

In this section, we analyse how multilingual competence is included in
qualification types ([34]) referenced to EQF levels 3, 4 and 5 ([35]). Qualification type
refers to a group or cluster of qualifications within a country that share specific
characteristics. In total, 78 qualification types are identified in the 35 VET systems.
The extent to which multilingual competence is included in reference documents,
IVET programme delivery, and assessment standards is presented in Figure 27.

Figure 27. **Multilingual competence in IVET qualification types**
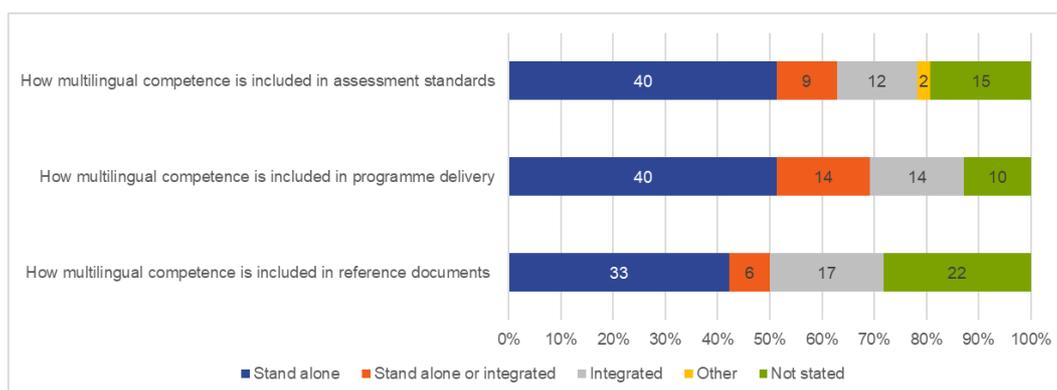
NB: N=78 qualification types. 'Other' refers to the BE-FL situation where assessment is the responsibility
        of the school. There is no national approach.
Source: Cedefop.

When looking at reference documents, programme delivery and assessment
standards, multilingual competence is included in almost all countries' qualification
types, though not explicitly mentioned in some reference documents (22 types)

([34]) In line with the dimensions presented in the analytical framework (Chapter 1).
      Information teacher/trainer training (Area 4) has only been collected on individual
      programmes because the range of teacher and trainer qualifications is too extensive
      to examine on qualification type. Within a qualification type, there are different
      programmes in diverse occupational fields.

([35]) Qualification types are a group or cluster of qualifications in a country that share
      specific characteristics, for example subsystem, legal regulations and regulatory body,
      purpose, general educational objectives, duration of related programmes, access
      requirements and level of labour market entry.

and assessment standards (15 types). It is not included at all in the eight qualification types in the UK.

4.2.1. Multilingual competence in reference documents

As shown in Figure 27, 33 qualification types (42%) have multilingual competence included as a stand-alone description in their reference documents. This is the case for all qualification types in Hungary (EQF levels 3, 4 and 5), where one living foreign language must be part of the programmes. A framework curriculum has been developed that includes methodological instructions for the development of language competences; additional instructions are given for foreign language learning for special education needs learners. For qualification types at EQF level 3 and 4 in Latvia, ability to use the official state language and at least one foreign language is specified in the reference document. In Poland, the VET core curriculum has a separate unit of learning outcomes dedicated to foreign language competence (used in the professional context).

Six qualification types (8%) describe multilingual competence both as stand-alone competence and as integrated in other learning domains of the reference documents. 17 qualification types (22%) have multilingual competence integrated in other learning domains, such as learning outcomes on occupational practice.

In 22 qualification types (28%), multilingual competence is not mentioned in the reference documents, possibly because it is not mandatory but optional according to occupational orientation. For that reason, it is not included in general guidelines on developing learning outcomes and educational objectives for individual qualifications, programmes and curricula. The UK qualifications (EQF level 3-4) are examples of reference documents that do not mention foreign languages specifically.

4.2.2. Multilingual competence in IVET programme delivery

As shown in Figure 27, multilingual competence training is provided as a stand-alone subject/module in 51% of qualification types (40 types). In these cases, students receive training in foreign languages that is not occupation-specific; such content will have to be provided through interaction between the foreign language teacher and the occupation-specific teacher/trainer. In Austria, one living foreign language must be part of programmes for the VET college school leaving certificate (EQF level 5), irrespective of the vocational orientation of the school ([36]).

([36]) According to an interviewee, in some curricula for programmes of this qualification type, the process of renewing curricula has expanded English in vocational colleges to four hours per week, and 100 hours of CLIL have been added.

Multilingual competence is integrated in other subjects in 18% of qualification types (14 types). In Malta in most advanced diplomas (EQF level 4), key competences including multilingual competence, are taught in a contextualised format related to the vocational context of the qualification. In another 18% (14 qualification types), multilingual competence is taught both as a stand-alone subject/module and integrated in other ones. In 13% of qualification types (10), multilingual competence is not mentioned explicitly; in some cases, VET providers can decide whether and how to deliver it.

Multilingual competence is predominantly delivered stand-alone in qualification types offered in school-based settings (32 of 49). It is often a general education course for IVET students from different disciplines and sectors. In school-based qualification types that include work-based learning in school workshops and laboratories multilingual competence is mainly delivered both as a stand-alone subject/module and integrated in occupation-specific ones. In these types, it is offered as a general education subject but contextualised in the work environment, using context-specific dictionaries (lists of key terms) and assignments.

4.2.3. Multilingual competence in assessment standards

Countries apply different assessment approaches in IVET, even differentiating between qualification types. They can be based on final assessment, certification examination or on an assessment of learner performance in distinct parts of the qualification without a final assessment. A final assessment can be done by various methods, such as written, oral and/or practical examinations.

As shown in Figure 27, in 51% of the qualification types (40) multilingual competence is assessed as a stand-alone subject/module. In Austria, for the VET school qualification (EQF level 5), English is compulsory, assessed as a stand-alone unit in a written final examination and in an oral examination. In some countries, national agencies are responsible for assessing parts of the foreign language learning. This is the case the Flemish Community of Belgium, Czechia and the Netherlands. In Czechia, the Ministry of Education, Youth and Sports is responsible for the preparation of a standardised examination for foreign languages and other subjects. In the Netherlands, English is part of VET level 4 (EQF level 4) and therefore part of this key competence is assessed centrally as a stand-alone unit. VET providers can decide how to assess those aspects that are not assessed centrally such as, listening and speaking.

In 12% (nine qualification types), multilingual competence is assessed both as a stand-alone competence and integrated in the assessment of other competences. In Germany, a foreign language is assessed in relation to the

school-based subjects (such as English), while the practical assessment (occupation-specific) also takes account of the learner's proficiency level.

In 15% of qualification types (12), assessment of multilingual competence is integrated in other competences. In German, apprenticeship programmes, foreign languages are assessed by completing a task in the respective language (EQF level 3 and 4).

For 19% (15 qualification types), multilingual competence is not specifically assessed or is not assessed in all qualifications included in the qualification type. This is the case mainly in the Irish and UK qualification types.

Assessment is in line with how multilingual competence is delivered. In half of the qualification types, assessment is stand-alone, often closely related to how delivery is organised in general education. A concern is whether occupation-specific multilingual competence is sufficiently assured by the assessment practice.

4.2.4. Multilingual competence and EQF levels

There are no differences in how multilingual competence is covered at EQF level 3 and EQF level 4. However, assessment standards of qualification types at EQF level 3 have multilingual competence included less often than those of qualification types at EQF level 4 (approximately 82% and 97%, respectively). This can be explained by the fact that, in many countries, EQF level 4 IVET qualifications provide access to further learning (including higher education) and therefore there is a general education objective for a certain level of multilingual proficiency.

4.3. Multilingual competence in individual IVET programmes

In this section, the extent to which multilingual competence is included in the curricula of three programmes in each of the EU+ countries is discussed. The 105 programmes cover 54 of the 78 qualification types. The following aspects are considered:

(a) delivery of multilingual competence (Section 4.3.1):
(b) assessment of multilingual competence (Section 4.3.2):
(c) teachers' skills in teaching multilingual competence (Section 4.3.3).

Whether multilingual competence is considered to be a 'pure' key competence required by all citizens of the 21st century or as an occupation-specific competence is discussed in Section 4.3.4.

4.3.1. Delivery of multilingual competence in VET programmes

Key messages:
- Multilingual competence is delivered in 83% of the programmes.
- Multilingual competence is most frequently delivered as a stand-alone subject/module (51% of all 105 programmes), with little sector variation.
- Multilingual competence is mainly delivered as a stand-alone subject/module in school-based programmes including work-based learning and in work-based programmes with limited school-based learning, (59% and 55%, respectively).
- Multilingual competence is delivered in an instructor/teacher-centred approach in more than two-thirds of programmes. Depending on the individual teacher/trainer, the approach can be combined with interactive/participative methods, use of online platforms, and self-learning.

4.3.1.1. *Organisation of learning*

Multilingual competence is more often delivered as a stand-alone subject/module (51% of programmes). It can also be delivered as both stand-alone subject/module and integrated in other subjects/modules (21% of programmes). Integration means that students can develop skills in understanding and producing spoken and written foreign language in theoretical, practical and/or technical modules using technical manuals, specialised terminology and internet sources.

Multilingual competence can also be integrated (5% of programmes); for instance, technical terms in English are used in school subjects of the German VET programme for construction mechanics. Delivery of multilingual competence in programmes in the three sectors is presented in Figure 28.

In all three sectors, multilingual competence is most frequently delivered as a stand-alone subject/module with little variation per sector. In the accommodation and food service sector, this form of delivery is used in 54% of programmes; in the construction and manufacturing sectors the figures are 51% and 49% respectively.

Figure 28. **Delivery of multilingual competence in the programmes per sector**
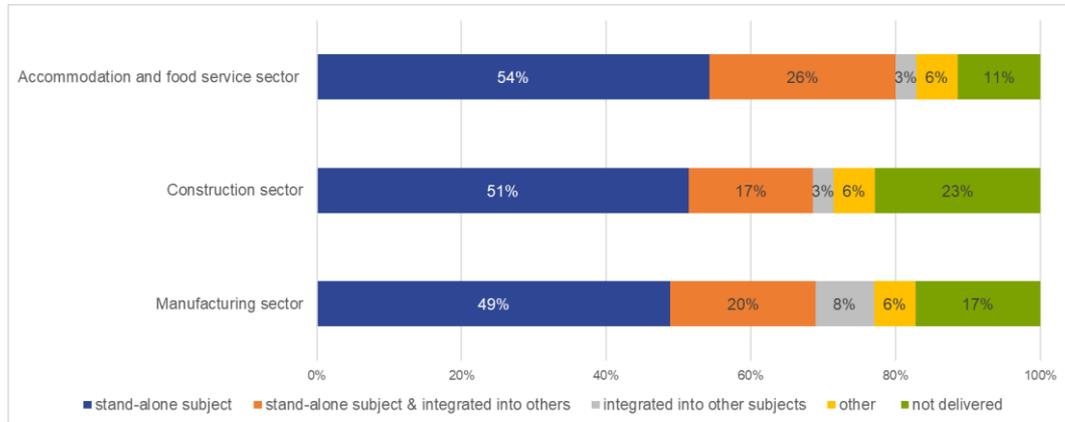
NB: N=105 programmes. The category 'other' means that, for instance, IVET providers have flexibility
         on how to deliver the programme including the delivery of multilingual competence.
Source: Cedefop.

There are differences by EQF levels. For instance, programmes at EQF level 3 (53 programmes) deliver multilingual competence more often as a stand-alone subject/module (71%) than do programmes at EQF level 4 (49%). However, EQF 4 programmes deliver multilingual competence more often both as a stand-alone subject/module and integrated in other ones (30%) than programmes at EQF level 3 (19%). It seems that the higher the EQF level, the more specialised the multilingual competence (linked to the occupational field) required. Therefore, it tends to be increasingly integrated in other, most probably occupation-specific, modules [37].

In school-based programmes that include work-based learning (59 programmes) and in work-based programmes with limited school-based learning (20 programmes), multilingual competence is mostly delivered as a stand-alone subject/module (60% and 55% of programmes, respectively, see Figure 29). In work-based programmes, multilingual competence is more often perceived as a 'pure' key competence (within the framework of general subjects) and delivered partly in vocational schools (for instance, apprenticeship programmes) that have relevant stand-alone subjects/modules. This is the case for 11 programmes, two of which are in the accommodation and food service sector.

Multilingual competence is delivered as a stand-alone subject/module in 22% of school-based and work-based programmes. It is not delivered in 52% of school-based and work-based programmes.

_____

[37] For programmes at EQF level 5, no pattern can be identified as all three programmes deliver multilingual competence differently. Programmes at EQF level 2 and programmes that are not yet referenced to the EQF were not considered.

Figure 29.   **Delivery of multilingual competence per type of VET programme**
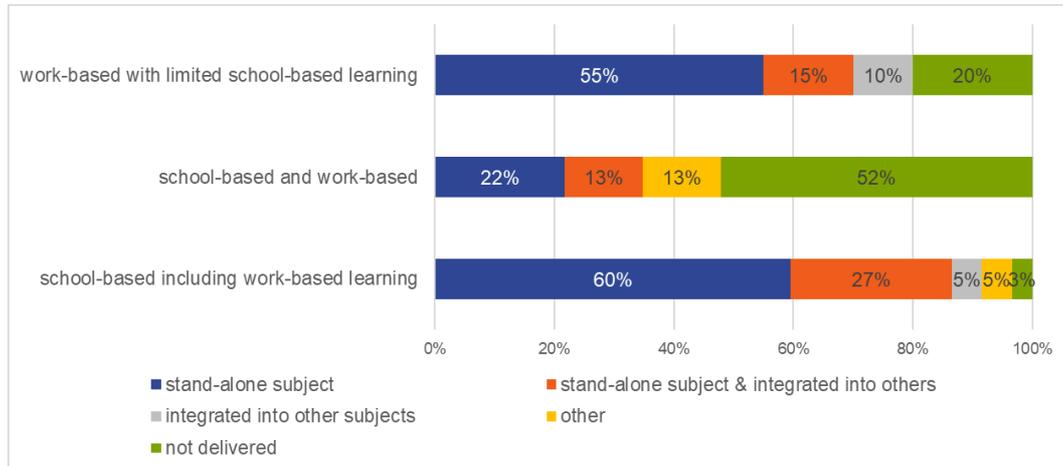
NB: N=102 programmes; three programmes are not applicable. The category 'other' means that, for instance, IVET providers have flexibility on how to deliver the programme including the delivery of multilingual competence.
Source: Cedefop.

4.3.1.2.   *Foundational and non-foundational competence*

The foundational or non-foundational role of a competence indicates how it supports development of other competences within a VET programme.

In most VET programmes in the sample, multilingual competence is considered non-foundational for acquiring other competences. It is mainly delivered as a stand-alone subject/module and is seen as a 'pure' key competence.

Figure 30.   **Foundational and non-foundational multilingual competence by sector**
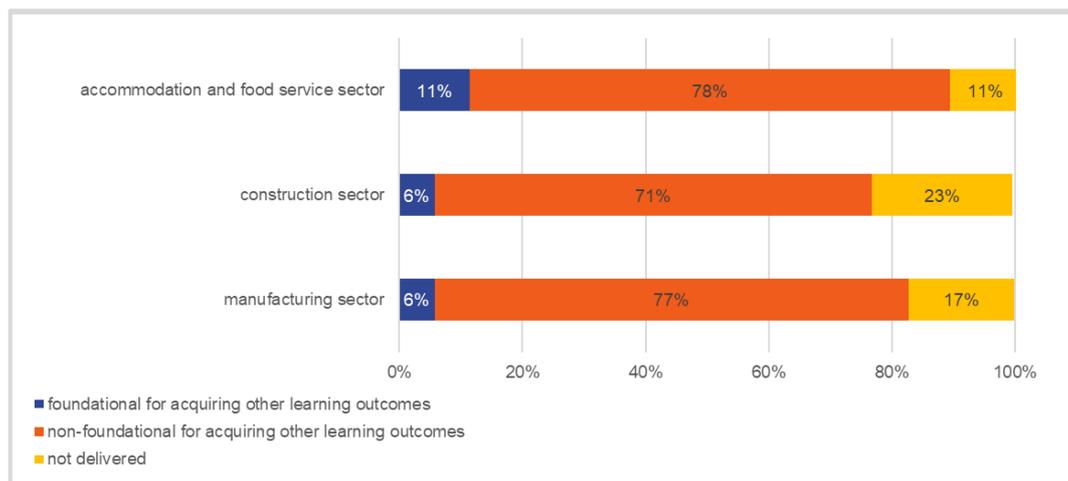
NB: n=105 programmes.
Source: Cedefop.

Figure 30 shows that there is no difference by sector. Multilingual competence is considered foundational for acquiring other competences in only 8% of programmes. An example of foundational multilingual competence is a module of the English language that offers the basis for vocation-related subjects (Bulgaria). Another example is when the completion of a basic module in a foreign language (in the framework of general education subjects) is a criterion for entering an IVET programme (waiter/waitress programme in Denmark). A third example is when modules on professional terminology in a foreign language (delivered in the first years of the programme) are foundational for learners (construction programme in Greece).

Where multilingual competence is foundational (eight programmes), it is delivered as a stand-alone subject and perceived as both a 'pure' key competence and an occupation-specific competence (five programmes). In the accommodation and food service sector, multilingual competence is perceived more often as foundational (11%) than in the construction (6%) and manufacturing (6%) sectors. This may be because the accommodation and food service sector perceive multilingual competence as an occupation-specific or as both an occupation-specific and a 'pure' key competence more than do the other sectors where it is mainly seen as a 'pure' key competence (see Section 4.3.4).

In the cases where multilingual competence is delivered as an add-on/elective module, it is non-foundational. For instance, in the Irish Hospitality and operations programme, learners may select up to three foreign language modules from a choice of seven options offered. The foreign language modules are optional, not mandatory for acquiring the qualification; a learner could opt to take other choices such as occupational first aid and food science and technology instead of foreign language modules.

4.3.1.3. *Mode of delivery*

Multilingual competence is most frequently delivered in an instructor/teacher-centred approach (79% of 105 programmes, see Figure 31.) with few differences between sectors. Typically, multilingual competence is taught in traditional classroom settings, but the mode of delivery largely depends on individual teachers and trainers. As highlighted in three Spanish programmes, available regulations do not detail delivery mode, so the teaching methodology depends on the class teacher.

Figure 31.   **Delivery mode of multilingual competence in sector VET programmes**
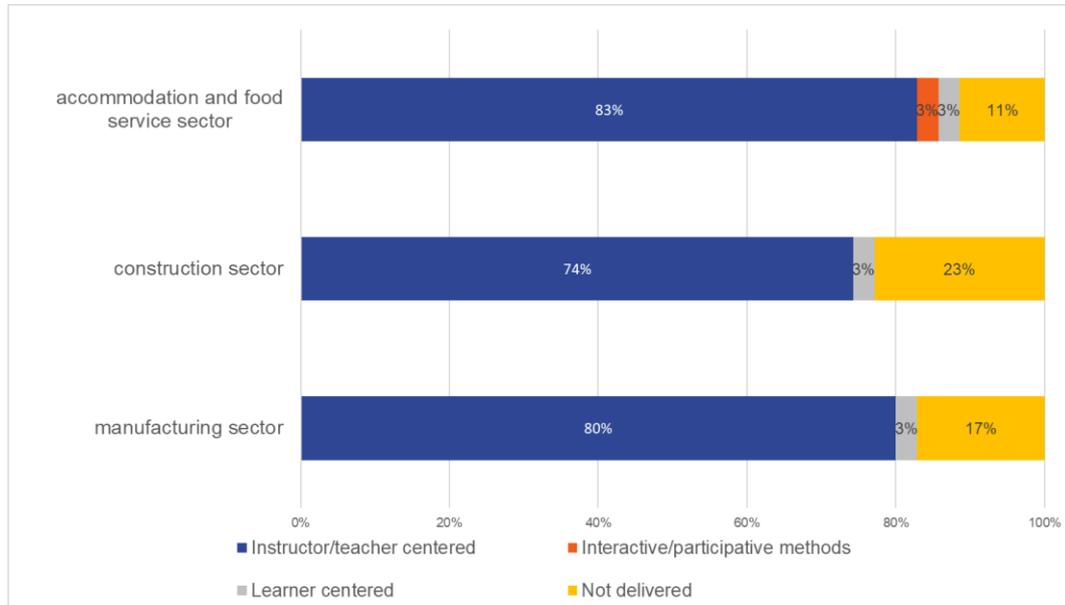
NB: N=105 programmes. 'Not delivered' means that multilingual competence is not part of the
          programmes.
Source: Cedefop.

Instructor/teacher-centred delivery can be the only delivery mode or combined with other delivery modes, such as interactive/participative methods and/or online platforms and work-based elements (see Box 24). A combination of instructor/teacher-centred delivery, interactive/participative methods and/or a third delivery (blended) form was observed in 53 of the 105 programmes.

Box 24.   **Examples of instructor/teacher-centred delivery of multilingual
           competence**

**Flemish Community of Belgium, restaurant and kitchen third degree BSO
(vocational schools) programme:** foreign language courses are provided in a
classroom setting. Through interaction between occupation-specific teachers and
language teachers, occupation-specific content (e.g., ingredients, kitchen tools) can
be integrated into language lessons; picture dictionaries support integration. In work-
practice, students may be in a situation to serve foreign guests.
Estonia, welder programme: the programme is an example of a combination
between instructor/teacher-centred delivery and interactive/participative methods.
During the lessons, students are involved in active learning by solving problems,
discussing topics and communicating with one another. In addition, students learn
English in the workplace during their internship. Many Russians welders work in
Estonia and students must communicate with them during their internship. Students
learn independently by finding and translating information from the internet, by

reporting recent incidents in English, and explaining how technology works. Students are prepared independently for vocabulary tests.

France (all three programmes): since the introduction of the EU framework for foreign languages and the communication priority, writing in a foreign language is less developed than oral communication. Learning is centred on active learning such as using games or placing students in a work situation. In some cases, foreign language workshops are organised to teach technical vocabulary. Students can do a training period abroad and teachers in foreign language may support them to take the necessary steps.

Portugal, construction technician programme: English language is taught in the classroom with all the required resources (including ICT equipment). In class, the teacher/trainer fosters the learning process by having students play an active role in the learning process (either individually or in a group) and organise debates and exchange of ideas. The activities include research organisation and information management, text production, and oral presentation/presentation of projects.

Source: Cedefop.

Use of interactive/participative methods is limited (see Figure 31**Figure 31.**). Learner-centred delivery is characteristic of all three Finnish programmes, possibly because VET delivery in Finland is strongly student- and individual-centred. A personal competence development plan is prepared for each student to serve as the basis for delivery of all competences, including multilingual competence. Multilingual competence is not delivered (not part of the programme) in 18 of the 105 programmes, as with the Danish and German bricklayer programmes.

4.3.2. Assessment of multilingual competence in VET programmes

Key messages:
- Multilingual competence is assessed in 81% of the 105 programmes. It is least assessed in the construction sector.
- Most common assessment methods are written (33%) and oral tests (30%).

Multilingual competence is assessed in 81% of the 105 programmes. Multilingual competence is not assessed when it is not part of the programme or is not an assessment criterion: it is more often not assessed in the construction sector (29%) compared to the manufacturing (20%) and the accommodation and food service sector (6%) (n=105 programmes). In EQF 4 programmes, multilingual competence may form part of the matriculation exam (held after completing general upper secondary education).

Multilingual competence is most often assessed in school-based programmes that include some type of work-based learning (65%) than in work-based programmes with limited school-based learning (18%), and programmes that

combine school-based and work-based approaches (15%) (n=85 programmes, only those programmes where multilingual competence is assessed were considered, so two programmes were not applicable).

Assessment methods for multilingual competence applied in programmes are given in Figure 32.

Figure 32. **Assessment methods for multilingual competence**
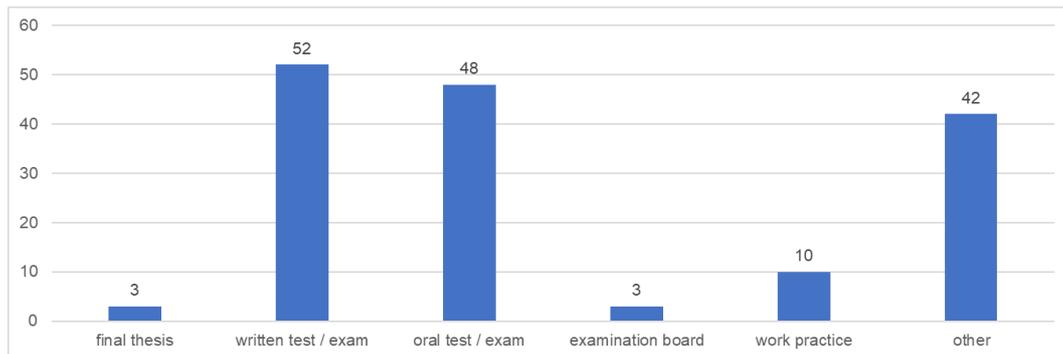
NB: N=85 programmes; for 20 programme multilingual competence is not assessed. Multiple answers possible.
Source: Cedefop.

The most frequent form of assessment is a written test/exam, followed by oral test/exam.

Written and oral tests are usually used to assess student performance during the learning process. Often, multilingual competence is not part of the final examinations for a vocational qualification, but passing the respective subjects is compulsory for graduation. This is the case for the bricklayer programme in Czechia and in the three programmes in Austria and Cyprus.

In the Austrian apprenticeship programmes, multilingual competence is not assessed in the company-based part of the training but in written and oral tests in the school-based training. Students must pass vocational school to sit the final apprenticeship examination.

Multilingual competence is also assessed in work practice, as observed mainly in programmes in the accommodation and food service sector (seven of 10 programmes).

Other methods for assessing multilingual competence usually refer to a combination of assessment methods (mostly written and oral examination). For instance, in all three Cyprus programmes assessment is continuous. The final grade considers the performance of learners during the course, oral examination (reading comprehension, grammar, oral communication and understanding competence) and written tests/exams (reading comprehension, vocabulary, written communication, dictation, grammar).

In the Estonian bricklayer programme, multilingual competence is assessed in a final report prepared for subjects such as Introduction to specialty and Bricklaying. English language proficiency is assessed on how the student translates and refers to foreign specialised terminology, knowledge of specific building materials terminology in English, and use of English to explain work processes and to express ideas.

The three Finnish programmes are examples of how assessment depends on whether multilingual competence is delivered as a stand-alone common vocational unit or as part of a specific vocational unit (integrated with other learning outcomes). When assessed as a stand-alone unit, a wide range of methods is used such as:

(a) examinations, individual and group project assignments;
(b) simulation of different working life situations in which a foreign language is used;
(c) portfolio assessment and use of e-learning environments.

When multilingual competence is part of a vocational unit (integrated in other learning outcomes), the main assessment is demonstration of vocational skills. This consists of work assignments organised in working places and situations. Supplementary assessment methods can also be used. Demonstrations are assessed jointly by teachers, working representatives (workplace instructor), and the student (self-assessment). This assessment method is used in the Irish hospitality operations programme in which learners are asked to demonstrate their aural and oral skills. In assessment of listening skills, learners are required to listen to five pre-recorded passages to test their listening and interpretation skills. In addition to skills demonstration, the portfolio/collection of work method is used. This may require the learner to complete short assignments involving reading comprehension and writing skills tests. For example, in assessing reading comprehension skills, learners may be asked to extract information and show understanding of a variety of texts (authentic material, such as websites, advertisements, and forms). Both skills demonstration and portfolio/collection of work carry equal weight for the final grade.

4.3.3. Teacher/trainer competences

Key messages:
- In all programmes that include multilingual competence, teachers have a higher education degree (87 programmes) ([38]), which is either in a foreign language, education or a specific professional field. ([39]).
- While initial teacher training seems to be very well defined for all the programmes reviewed (expressed in formal qualification requirements), CPD is less well defined Nevertheless, CPD is explicitly referred to in 50% of the programmes reviewed.

In all programmes where multilingual competence is delivered, teachers have a higher degree (in a foreign language, education or a specific professional field). A higher degree in a foreign language can be complemented by teacher education and professional experience in the field.

CPD is not always compulsory; its organisation and funding are more often the responsibility of the employer (VET provider) or the individual teacher (self-initiative). VET providers in Finland are required by legislation to ensure professional development of teachers. In Spain, CPD depends on the training centre and the specific department in which teachers work. All teachers must devote at least 33 hours per school year to continuous training.

CPD is referred to explicitly in 50% of all programmes. It varies greatly in content (specialised training, training in new teaching techniques and methodologies including digital competence, pedagogical practices) format and duration (short-term training organised annually, teacher exchange programmes, study visits, longer skills upgrading courses, and self-directed learning). Multilingual competence of pedagogical and non-pedagogical staff in Czech schools has been increased in recent years in a range of educational programmes and projects. Such programmes include an open language gateway and CLIL in vocational subjects, in which almost 500 teachers are trained in a 40-hour programme. Examples of professional pathways for teachers in multilingual competence are presented in Box 25.

([38]) Programmes that do not deliver multilingual competence are excluded.

([39]) In almost all VET programmes, professionals are referred to as teachers. Therefore, the distinction between teachers and trainers is not relevant.

Box 25.   **Examples of professional pathways of teachers teaching in multilingual competence**

Cyprus, cook/waiter programme: Mr. DM graduated in English literature and applied to becoming an English teacher in the public secondary education system. After a waiting period, he attended the one-year compulsory pre-service training programme organised by the University of Cyprus that consists of afternoon classes three days per week. At the same time, he had to acquire classroom experience by undertaking face-to-face classroom duties three days per week supervised and mentored by senior teachers (assistant head teachers or head teachers). After that, he was offered an appointment, and did a probation period of two academic years. During this period, his progress was closely monitored, after which he was given a permanent appointment. During the probation and the permanent appointment period, he had to attend upgrading seminars in English language.

Romania, bricklayer/mason/plasterer programme: Ms. CG is an English teacher in a secondary school group dedicated to mechanics and construction. She is a graduate of the Theology Department of the University of Bucharest, specialised in Letters – English language and has over 15 years teaching experience in the technical VET system in mechanics and construction. She has participated in numerous continuous training programmes, many related to curriculum and reference material development in technical VET. She was involved in developing curricular auxiliaries for the previous VET reform, in which materials for foreign language subject/modules were adapted to professional needs and she still uses this material as a resource for programme delivery.

Slovakia, bricklayer programme: Mr. PJ has been a teacher for almost 10 years. He majored in construction engineering at university, ran his own company in the construction sector, and has been a lecturer in language schools in Slovakia for almost 20 years. He completed the state examination in foreign language and in pedagogical education. He has two degrees in foreign languages and systematically obtains credits to improve his capacities and professional skills.

Source: Cedefop.

4.3.4.   Multilingual competence included as a 'pure' key competence or as an occupation-specific competence in VET programmes

Key messages:
- In 43% of programmes, multilingual competence is considered to be a 'pure' key competence, in 21% both 'pure' and occupation-specific, in 19% occupation-specific, while it is not delivered in 17% of programmes.
- The way multilingual competence is perceived differs across sectors; it is most often perceived as occupation-specific in the accommodation and food service sector (32%) compared to the manufacturing (17%) and construction sectors (9%).

In almost half of the programmes (43%), multilingual competence is considered to be a 'pure' key competence necessary for people to work and live in the 21st

century (see Figure 33). It is often part of the general upper secondary education and not included in vocational practice and/or vocational examinations. This is observed in programmes mostly in the construction and manufacturing sectors.

Figure 33. **Multilingual as a key or an occupation-specific competence**
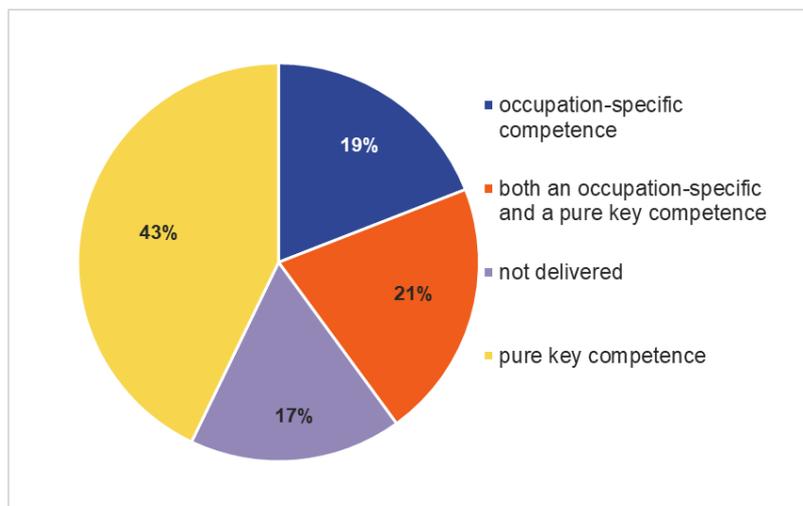
NB: N=105 programmes.
Source: Cedefop.

In 21% of programmes, multilingual competence is perceived as both a 'pure' key competence and as occupation-specific. As work environments become increasingly more international, a minimum knowledge of (usually) English is required. Also, in multilingual societies, for instance in Belgium or in Luxembourg, multilingual competence is an essential work requirement.

In 19% of programmes, multilingual competence is occupation-specific, or a requirement for the job-specific practice ([40]). Most of these programmes are in the accommodation and food service sector. For instance, the framework curriculum for foreign language in VET schools in Bavaria defines English as an occupation-specific (*Fachunterricht*) and compulsory subject to be integrated in the VET programme for different occupations in the hospitality industry.

In 17% of programmes, multilingual competence is not delivered. This is the case in the two Belgian (French Community) and the two Irish programmes in the construction and the manufacturing sector, the German and the Danish bricklayer programmes and in all UK programmes.

When we look at how multilingual competence is perceived at sectoral level, significant differences can be identified (see Figure 34). In the construction and

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([40]) This requirement is based on the occupational or education standard linked to the IVET programme.

manufacturing sectors, multilingual competence is mainly perceived as a 'pure' key competence (in 57% and 51% of programmes respectively). In contrast, it is perceived as a 'pure' key competence in only 20% of programmes in the accommodation and food service sector. In this sector 31% of programmes perceive it as an occupation-specific competence, rare in the construction and manufacturing sectors (in 9% and 17% of programmes respectively).

Figure 34.   **Multilingual as a key or occupation-specific competence by sector**
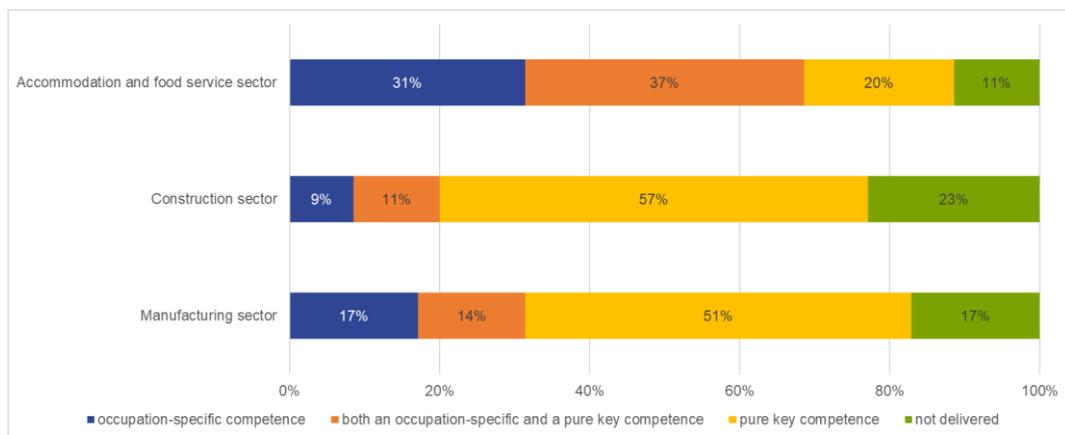
NB: N=105 programmes.
Source: Cedefop.

4.3.5.   **Extent to which formal EU definition of multilingual competence is reflected in reference documents linked to individual programmes**

Key messages:
- Definitions of multilingual competence in reference documents differ considerably between the countries and VET systems reviewed.
- In approximately 70% of the programmes, the national definition of multilingual competence reflects either entirely or partly the EU definition in the Council recommendation on key competences for lifelong learning ([41]).
- The EU definition is more often entirely reflected in the accommodation and food service sector (43%) than in manufacturing (26%) and construction (23%). When the EU definition is partly reflected (41% of the cases), the elements least covered are knowledge of functional

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([41]) Entirely means that all elements of the formal EU definition are included in the national definition; partly indicates that only some elements are found. Partly can also mean that the national definition generally covers but is not as specific as the formal EU definition, or that there are national variations of elements of the formal EU definition.

grammar, awareness of the main types of verbal interaction, and
registers of languages.

- Underlying data do not provide evidence about elements of the definition
  prioritised in the three sectors. However, it is likely that programmes in
  the accommodation and food service sector focus on oral and written
  communication skills, while programmes in the manufacturing sector
  draw on ability to understand and read professional texts, including the
  use of a specialised terminology. Indications for the construction sector
  are not available [42].

According to the recommendation, multilingual competence is the ability to
use different languages appropriately and effectively for communication. This
competence requires knowledge of vocabulary and functional grammar of different
languages and an awareness of the main types of verbal interaction and registers
of languages. Essential skills for this competence consist of the ability to
understand spoken messages, to initiate, sustain and conclude conversations and
to read, understand and draft texts, with different levels of proficiency in different
languages, according to the individual's needs (European Commission, 2018a).
The extent to which the EU definition is reflected in sector IVET programmes is
presented in Figure 35.

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[42] Based on comments provided by interviewees.

Figure 35. **Extent to which the EU definition of multilingual competence is reflected in reference documents linked to individual programmes per sector**
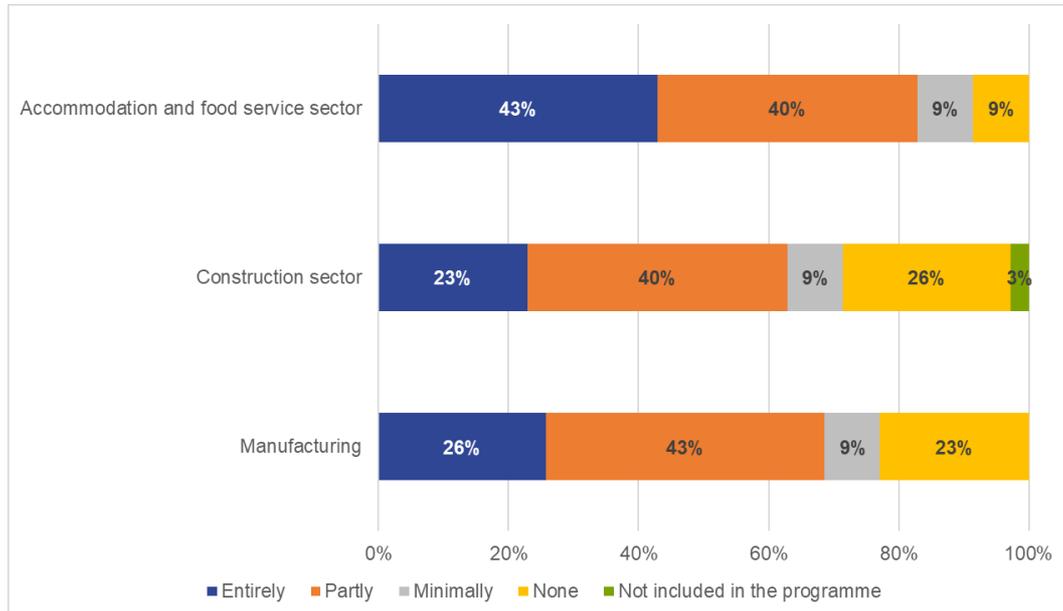
NB: N=105 programmes. Entirely = all elements of the EU definition are found; partly = elements of the EU definition, but with national variations; minimally = very few elements of the EU definition; none = no elements of the EU definition, for instance, a) multilingual is not defined in the reference documents; b) it is not mentioned explicitly in the general educational objectives of the programme (which however does not mean that it is not delivered); not included in the programme = multilingual competence is not part of the programme.

Source: Cedefop.

From the three sectors explored, the accommodation and food service sector showed the highest rate of reference documents entirely reflecting the EU definition (43% of programmes). The examples in Box 26 illustrate the variety of descriptions of multilingual competence in the reference documents of some of the programmes.

Box 26. **Definitions of multilingual competence in education and occupational standards and/or other reference documents that reflect the EU definition in the accommodation and food service sector**

German-speaking Community of Belgium: French as first foreign language competence is described in detail and the learning outcomes are positioned at level B2. They exceed the formal EU definition.

Flemish Community of Belgium: The foreign language competence is A1/A2. The emphasis is on oral communication and less on writing. Although the EU definition is covered, it seems that it is slightly more demanding in terms of proficiency level.

France: Foreign language learning outcomes are in line with the European framework. Learning in vocational training should be linked to working environment and the introduction of the CEFR was ground-breaking. The European definition is used in the French context. The level to be reached at school is defined by the Law.

At international standard classification of education (ISCED) 3 level (EQF3), A2 of the CEFR is required.

Ireland: The EU definition of foreign language competence is not reflected in the learning outcomes outlined in the reference document for the Hospitality operations programme. However, it is almost fully reflected in the learning outcomes in the reference documents for the foreign language modules. These reference documents do not provide a definition of foreign language competence, but the main elements of the formal EU definition are found almost in their entirety in specified learning outcomes.

Austria: All elements of the EU definition are included in more detail and by level from basic to professional level.

Finland: The formal EU definition for foreign language competence is included in the vocational qualification in restaurant and catering services - competence area of customer service (waiter/waitress). The wording differs and individual elements of the definition are to be found in different competence and learning units, but the idea and overall content of the definition are part of the qualification. Foreign language competence in a qualification is more broadly and comprehensively defined and described than in the EU definition. In learning and teaching, strong emphasis is put on the use of foreign language for communication.

Source: Cedefop.

The EU definition is partly reflected in 40% of programmes (14 programmes) in the accommodation and food service sector because it is more comprehensive than what is described in the reference documents of the respective programmes. For instance, the Czech programme states that a student should have basic communication skills; according to the EU definition, a student must be able to initiate, sustain and conclude conversations. The reference documents of the German programme do not include a comprehensive definition of multilingual competence. Several elements of the EU definition are found in In the Spanish programme, but not expressed exactly as in the EU definition (there are some national variations). A few elements of the EU definition are found in 8% of programmes and no elements in a further 9% of programmes.

In the construction sector, 23% of IVET programmes entirely reflect the EU definition.

Box 27.   **Explicit formulation of multilingual competence in the general and vocational framework curriculum applying to the bricklayer programme (Hungary)**

The framework curriculum for the general foreign language subject for grades 9-11 defines multilingual competence as follows: the learner can understand and use the more common everyday phrases, and to engage in simple interaction if another person speaks in a slow, clear and cooperative way.

The framework curriculum for the additional two years of vocational secondary schools provides a more detailed description of multilingual competence including:
• self-confident use of basic, receptive, productive, and interactive language activities;
• ability to use text compilation and comprehension strategies;
• ability to comprehend, highlight and interpret the meaning of written or spoken text;
• ability to plan and formulate the text of his/her report in words or in writing;
• for successful communication, ability to apply language tools enabling the learner to formulate thoughts and react adequately in different communication situations.

The vocational framework curriculum for bricklayers defines the goals of multilingual competence within the subject Employment I:
• ability to introduce oneself in personal and professional aspect;
• ability to fill in a simple standard form;
• professional management ability in a foreign language;
• basic grammar knowledge.

Source: Cedefop.

The EU definition of multilingual competence is partly reflected in 40% of IVET programmes in the construction sector (14 of 35 programmes). The Flemish Community of Belgium bricklayer programme does not explicitly mention multilingual competence in an occupational context. The Estonian bricklayer programme includes only English as a foreign language whereas the EU definition refers to different foreign languages. Multilingual competence is not mentioned in the vocational part of the Lithuanian bricklayer programme, but reference is made to the capacity to express oneself on a range of topics relevant to the profession. In Poland, the core curriculum on multilingual competence was developed according to the CEFR principles, but the VET core curriculum narrows the definition to use in an occupational context only ([43]). The EU definition is minimally reflected in 8% of programmes in the construction sector, no elements of the EU definition are found in 26% of programmes and in 3% of programmes, multilingual competence is not included (does not form part of) the programme.

([43]) The Polish bricklayer plasterer programme should comply with both core curricula.

In the manufacturing sector, the EU definition is entirely reflected in the reference documents of 26% of IVET programmes.

Box 28.   **Definition of multilingual competence in the all-round welder programme (Netherlands)**

Multilingual competence is not included in the reference documents for all-round welder (qualification file) but is included as an elective module. A student must be able to communicate effectively in the occupational context and this is in line with the formal definition. The Dutch description is wider for understanding English business manner and culture. This is not covered in the formal definition but is needed when an all-round welder is working with English-speaking or foreign companies and colleagues.

Source: Cedefop.

The EU definition of multilingual competence is partly reflected in 43% of programmes in the manufacturing sector.

The competence definition in the Czech engineering programme is less specific than the EU definition. In the Cyprus programme (technician of metal plates, welding, metal structures and natural gas piping) communication in foreign language is covered partly because it enhances the overall communication competence. In the Danish and Italian welder programmes, the learning outcomes of multilingual competence reflect the EU definition but with national variations. The EU definition is minimally reflected in 8% of programmes in the manufacturing sector and not at all in 23%.

CHAPTER 5.
Literacy competence in IVET

The 2018 Council recommendation on key competences for lifelong learning (European Commission, 2018a) defines literacy as a key competence in its own right. This conveys the importance of literacy as the basis for any competence development and further learning (European Commission, 2018a). It also underlines the finding that there is room for improvement in performance in reading literacy in Europe (OECD, 2019). Changes to the language aspect of the key competence framework include the need to develop literacy in the mother tongue, and also in the language of education, or in the official language of a particular country or region. These languages may not be the mother tongue in the case of migrants.

As set out in the 2018 recommendation, literacy competence 'is the ability to identify, understand, express, create, and interpret concepts, feelings, facts and opinions in both oral and written forms, using visual, sound/audio and digital materials across disciplines and contexts. It implies the ability to communicate and connect effectively with others, in an appropriate and creative way' (European Commission, 2018a). The EU high-level group on literacy (2012) defined literacy as the foundation for any competence development and further learning, with language competences more broadly as a key dimension for modernising European education systems. This group defines literacy competence using a multilayer approach, oriented broadly to the levels defined in the OECD programme for international student assessment (PISA). These literacy competence layers are as follows:

(a) baseline literacy: the ability to read and write at a level that enables self-confidence, and motivation for further development;
(b) functional literacy: the ability to read and write at a level that enables development and functioning in society at home, school and work;
(c) multiple literacy: the ability to use reading and writing skills to produce, understand, interpret and critically evaluate multimodal texts.

Literacy as a key competence cannot be separated from the broader language competence, which was given policy attention in 2002 in the Barcelona Objective. This target called on Member States to step up efforts to achieve a competitive, knowledge-based economy by promoting competence in mother tongue communication and in skills in two other languages for all citizens (Council of the European Union, 2002). In 2011, the EU high-level group of experts in literacy was

formed to provide recommendations for improving literacy at all ages, based on common success factors in literacy programmes and policy initiatives (EU high-level group of experts in literacy, 2012). A Commission staff working paper accompanying the *Rethinking education: investing in skills for better socioeconomic outcomes* further highlighted the importance of language competences for employability, mobility and growth in Europe (European Commission, 2012b). The paper underlines that language competences should be useful in everyday life and should match labour market demands.

5.1. National policies

Key messages:

- Between 2011 and 2018, all but three EU+ countries adopted and started implementing policies that promoted literacy competence in IVET. In total, there are 53 policies that promoted literacy competence, but only four focused solely on this key competence. They can range from policies focusing exclusively on IVET and literacy competence to those that cover the whole education sector and multiple key competences.

- Most policies (25 of 53) that promote literacy competence in IVET are strategies, generally having an agenda-setting purpose and presenting longer-term visions rather than short-term, practical implementation plans.

- In the reference period (2011-18), most policies were adopted in 2014 (14 policies). This peak was also linked to the EU policy planning schedule (2007-13; 2014-20).

- More than a third (38%) of the 53 policies refer to EU or international initiatives, such as Council recommendation on key competences for lifelong learning, EU 2020 strategy and CEFR. References to EU initiatives set the scene or directly affect policy content.

- Most policies (72%) adopted in 2011-15 have successfully completed their anticipated activities. More recent policies (2016-18) are more often still in the implementation phase (31% completed) but may already have contributed with partial results. Policies that did not complete the activities as planned are rare (8% of policies before and after 2015).

- Of the 53 policies, 32 seek to embed literacy competence through programme delivery, 25 focus on reference documents ([44]), 17 on teacher/trainer training, and 16 on revising assessment standards. Most policies focus simultaneously

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([44]) Reference documents are education and occupational standards that include learning outcomes descriptions and/or educational objectives.

on more than one of these areas, underlining the importance of integrated, holistic policies. A total of 17 policies promote literacy competence but do not embed it.

5.1.1. National policies promoting literacy competence in IVET

The study identified 79 national policies that promote literacy, multilingual and/or digital competence in IVET, as shown in Figure 36.

Figure 36. **National policies promoting literacy, multilingual and digital competences – focus on literacy competence**

In total: 79 policies identified
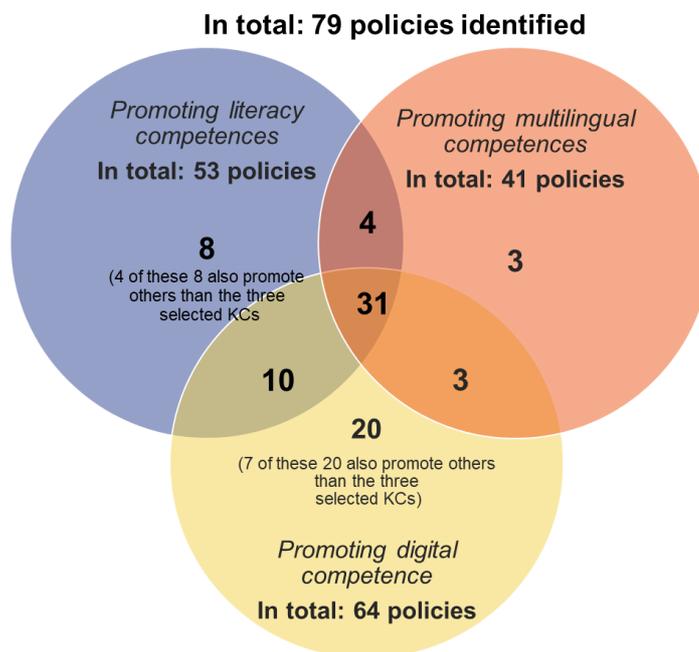
NB: N=79.
Source: Cedefop.

Figure 36 shows how many policies promote each of the three studied key competences. In the period 2011-18, 53 national policies promoting literacy competence in IVET were initiated and implemented. Policies often promote more than one key competence; 31 promote all three at once. For the purpose of presentation, the figure does not include how these policies relate to additional key competences (cultural awareness and expression, personal social and learning to learn, mathematical competence and competence in science, technology and engineering, citizenship, and entrepreneurship), but such overlaps are equally

common (^{45}). A closer look at these 53 policies reveals diversity, for instance in terms of scope, coverage and objectives.

First, the scope of what key competences policies promote varies substantially. Many promote multiple key competences and only eight mention literacy competence without multilingual and digital competences. Among these eight policies, only four exclusively promote literacy competence (^{46}).

Second, some policies were designed exclusively for IVET, while others address the entire education sector, without mentioning IVET specifically. The latter category is equally relevant to this study as these may also result in changes to how key competences are perceived, taught and assessed in IVET.

Third, the objectives of the policies vary substantially. While the selected ones all promote key competences in IVET, they seek to do so in a variety of ways. This study distinguishes between policies that only promote key competence(s) and those that also embed key competence(s) in IVET. The first are mostly focused on raising national awareness of the importance of literacy competences, or more specifically increasing the attention paid by the general public, students or education providers to it; the latter have the explicit objective of increasing the extent to which literacy competence is included in IVET, having a visible effect through revising reference documents (^{47}) or assessment standards, and focusing on programme delivery and teacher/trainer training.

These key characteristics in which the selected policies vary are summarised in Figure 37.

(^{45}) For instance, among the 31 policies that address all three key competences under study, 22 policies address all eight key competences.

(^{46}) The other four policies address literacy with a combination of additional key competences beyond the scope of this study (cultural awareness and expression, personal, social and learning to learn, mathematical competence and competence in science, technology and engineering, citizenship, and entrepreneurship).

(^{47}) Reference documents are the generic term for education and occupational standards, including the descriptions of learning outcomes and/or educational objectives.

Figure 37.   **Key characteristics of policies promoting literacy competence**

Policies promoting literacy competence

In total: 53 policies

11
Policies embedding literacy competence
In total: 36 policies

21

7
Policies exclusively focusing on IVET
In total: 28 policies

0

4

0

0

Policies exclusively dedicated to literacy competence
In total: 4 policies

10 policies
no embedding objective, no explicit target IVET, not exclusively dedicated to literacy
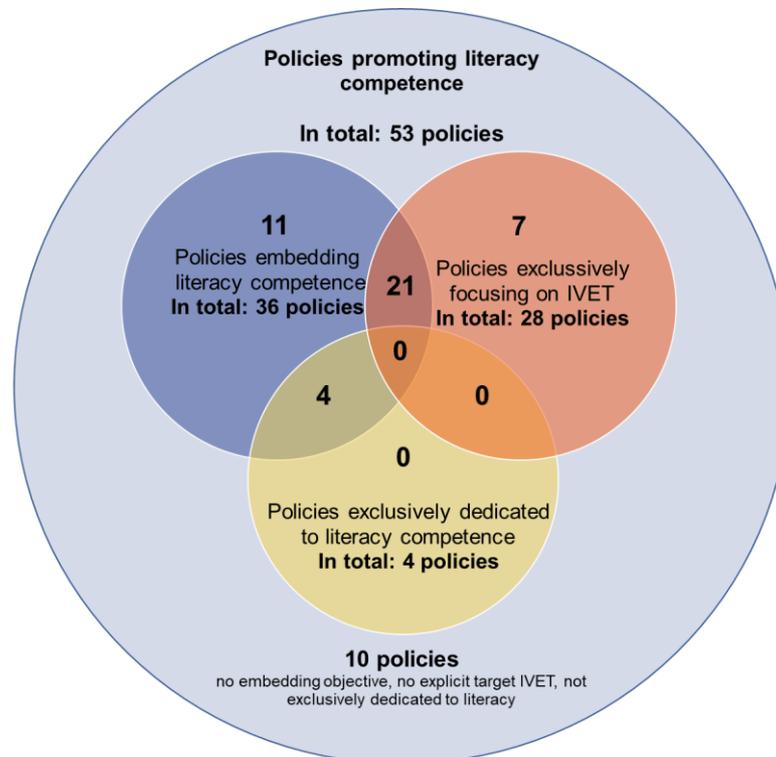
NB: N=53; all policies that focus on literacy competence.
Source: Cedefop.

Of the 53 policies, 28 exclusively focus on IVET. The rest mainly target the entire secondary education sector (including IVET) and may even cover the higher education sector. For instance, the Polish Lifelong learning strategy 2013-20 also targets higher education.

49 out of the 53 policies promote multiple key competences, with only four exclusively dedicated to literacy**.** The Cyprus strategic plan for the system of technical and vocational education and training 2015-20 promotes literacy, numeracy, multilingual, digital and personal and social competence. The Irish Further education and training strategy 2014-19 developed by Further Education and Training Authority (SOLAS) promotes literacy, numeracy, digital, personal and social competence, and entrepreneurship.

A total of 36 policies aimed to embed literacy competence. The remaining 17 policies promote literacy without defining concrete actions to impact visibly the extent to which key competences are included in IVET. Policies of this type tend to have broader objectives beyond only key competences, such as broad lifelong learning strategies or broader VET reforms.

Box 29.   **Policy embedding literacy competence**

Decree on Literacy Education 2013 (Austria)

The Decree states that literacy is an essential part of all education subjects and supports student learning and development. Literacy must be developed according to the individual requirements of students (sociocultural background, heterogeneity of living realities, multilingualism and interculturality). It is an essential competence area in education standards. This decree aims to embed literacy competence in programmes by requiring school authorities and teachers to make it a function of their classes. It also aims to embed literacy competence in university teacher training. This decree is a revision of the former literacy decree adopted in 1999 (GZ 29.540/0004-V/3c/1999).

Source: Cedefop.

Box 30.   **Policy not embedding literacy competence**

National Strategy for Lifelong Learning 2014-20 (Bulgaria)

In accordance with the strategy, annual action plans are developed, which have a specific area of activity related to improving the quality of school education and training in relation to the acquisition of key competences. This underlines the importance the strategy assigns to key competences. However, the strategy and the action plan refer predominantly to key competences in general; they do not specify concrete aims or measures regarding literacy, multilingual and digital competences.

Source: Cedefop.

Figure 37 also shows (in the overlapping three circles) that there are no policies that simultaneously focus exclusively on IVET, exclusively promote literacy competence and seek to embed it. A policy that comes close is the Irish example that focuses on both literacy and numeracy (Box 31).

Box 31.   **Policy focusing exclusively on IVET; targeting literacy and numeracy competence; and with the objective to embed literacy competence**

Embedding literacy and numeracy: Final report and action plan (2018) (Ireland)

The study examined the provision of integrated literacy and numeracy in the further education and training (FET) sector and made suggestions on how to improve this provision. There was no consistent approach to screen learner needs on literacy and numeracy. There is a recognition that improving the literacy competence of IVET/FET learners will assist them to achieve their vocational goals but will also be of benefit to them in participating in wider societal activities. Embedding of literacy and numeracy competences takes place through support for teachers (in-service teacher training) aiming also to increase learner retention (avoid dropouts). SOLAS (a state agency in Ireland with responsibility for assisting those seeking employment) has developed an action plan to implement the recommendations of the report and targets have been assigned to the network of Education and Training Boards who are the main providers of IVET at a sub-regional level. IVET teachers and trainers will be provided

with guidance materials and best practice examples on how to include literacy and numeracy in their programmes. They will also be given information on how to assess learners' literacy competence levels prior to the commencement of their IVET programme in order to identify what specific supports are required.

Source: Cedefop.

An overview of policy types that promote literacy competence in IVET is presented in Figure 38.

Figure 38. **Types of policies that promote literacy competence in IVET**
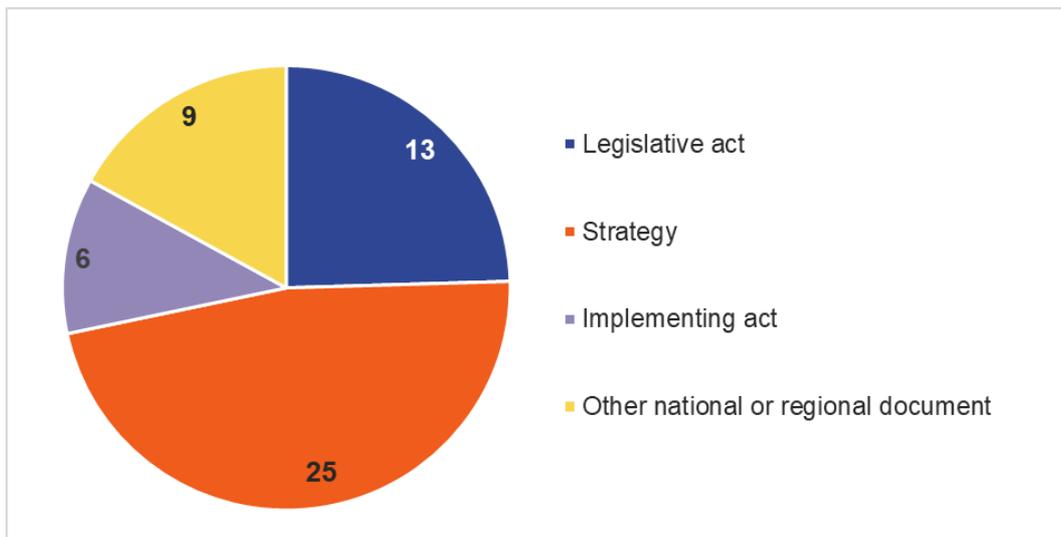
NB: N=53.
Source: Cedefop.

Most policies are characterised as a strategy. Compared to legislative acts and implementing acts, strategies generally have an agenda-setting purpose and present longer-term visions instead of short-term, practical implementation plans. This affects how objectives and envisaged results are phrased.

Box 32.   **Examples of a strategy and an implementing act for promoting literacy
competence in IVET**

Strategy: Lifelong learning strategy 2013-20 (Poland)

The strategy is explicitly related to the Council Recommendation on key competences
for lifelong learning. It aims to improve the level of key competences in general
education, VET and higher education by:

- increasing the use of teaching methods such as teamwork, project-based learning;

- strengthening the component of key competences, including personal and social
competences, in VET.

The strategy aims to promote key competences as a package; this is one of the key
activities to fulfil one of its five main objectives.

**Implementing act: changes (between 2010 and 2018) to examination and
qualification decisions in VET (The Netherlands)**

VET examinations in general subjects (Dutch, maths, civic education and English)
have been centralised and reference levels introduced for those subjects. This means
some examinations are no longer organised autonomously by schools. Further
changes enable candidates to take examinations at a higher level than the obligatory,
such as English at VET level 4.

Source: Cedefop.

Most policies promoting literacy competence had a broader societal
perspective. The main societal objectives attached to the 53 policies are presented
in Figure 39.

Most policies promote individual benefits for citizens, such as increasing:

(a) learner engagement in lifelong learning (30%);

(b) employability prospects (26%);

(c) social inclusion (25%).

Increasing citizenship skills, including the capacity to participate in modern-
day democracies is another overarching objective that underpins the logic of five
policies promoting literacy competence (9%). Four of the 53 policies (8%) do not
define overall objectives for individuals but set an objective at an overarching level,
aiming to contribute to economic development, competitiveness and innovation.

Figure 39.   **Policies promoting literacy competence by main societal objective**

Societal benefits: economic development, competitiveness, innovation, **4, 8%**

None, **1, 2%**

Personal development: employability, **14, 26%**

Personal development: citizenship skills, **5, 9%**

Personal development: social inclusion, **13,**

Personal development: support LLL, **16, 30%**
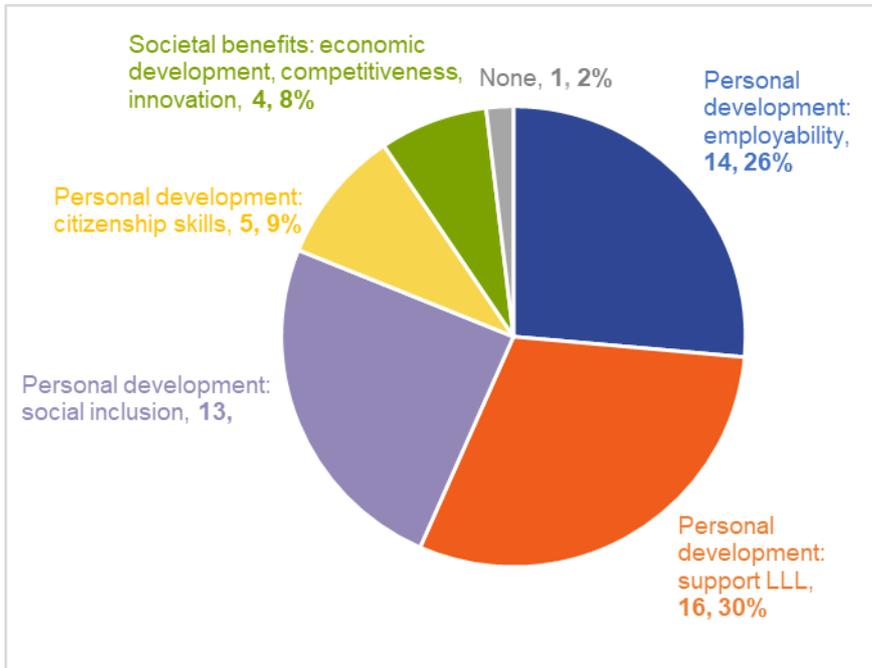
NB: N=53; all policies that focus on literacy competence.
Source: Cedefop.

5.1.2.   Year of policy adoption and EU references

An overview of policies that promote literacy competence in IVET by year of adoption is presented in Figure 40. A distinction is made between number of policies that only promote literacy competence (blue line) and policies that also embed literacy competence (orange line).

Figure 40.   **Number of policies that promote literacy competence in IVET by year of adoption**

Total number of policies

Number of policies embedding literacy competence
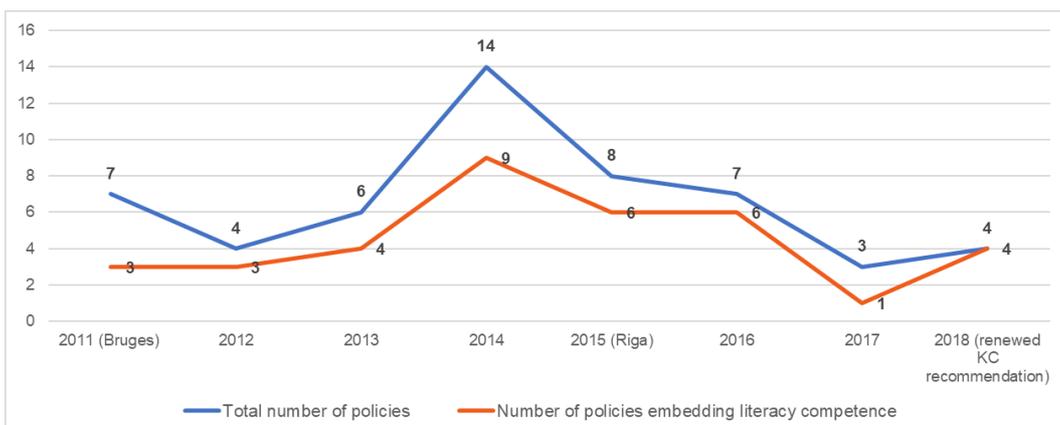
NB: N=53.
Source: Cedefop.

In the reference period (2011-18), most policies were adopted in 2014 (14 policies), followed by 2015 (eight policies). In 2017, only three policies were adopted as shown in Figure 40. The number of policies embedding literacy competence also peaked in 2014. This finding is linked to the EU policy planning schedule (2007-13; 2014-20). Examples include:

(a) Bulgarian national strategy for enhancement and increasing literacy 2014-20 and the National strategy for lifelong learning (2014-20);

(b) Cyprus national strategy for lifelong learning (2014-20).

The increased number of policies embedding literacy competence between 2014 and 2016 may be an indication that the Riga conclusions have inspired countries to pay more attention to embedding this competence. However, no further evidence of such a direct link was found. Of the 53 policies, 20 (38%) refer to EU or international initiatives. For literacy competence, reference is made to the recommendation on key competences for lifelong learning, the CEFR, and the work of Cedefop, the European Commission and OECD. References to EU or international initiatives usually set the scene for the policy, put it in a wider context, and create momentum for working on literacy competence in IVET.

There are also examples of policies that make explicit use of EU and international initiatives. For example, the Dutch changes to the examinations and qualification decisions on VET use the CEFR levels in discussing levels of English proficiency. Reference is also made to Dutch language proficiency.

The timeframe of policies also has an impact on the extent to which their activities were implemented at the time this study was concluded (2019). As shown in Figure 41, almost three quarters (72%) of policies addressing literacy competence have (largely) implemented the activities as planned, against 20% that are still in the process of implementation. 31% of policies adopted after 2015 had implemented activities as planned, while 61% of them were still in process. In 8% of the policies activities were not implemented as planned. In Hungary, a concept note for the transformation of the VET system and its alignment with economic demands (2011) set the stage for the development of the Bridge programme, which seeks to prepare students better to acquire key competences that would allow them to enter VET or the labour market. However, due to a limited involvement of relevant stakeholders, it was not able to transform assessment standards in VET as planned to allow an improved assessment of literacy competences.

Figure 41. **Literacy policy implementation**
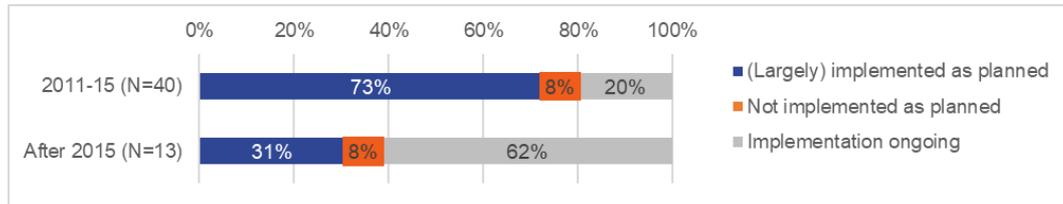
NB: N=53.
Source: Cedefop.

5.1.3. Policy focus areas

Policies embedding literacy competence do so through four interrelated areas of intervention: reference documents (education and occupational standards); programme delivery; teacher/trainer training; and assessment standards. The scope of each of the policies that explicitly defines at least one area to embed literacy competence in IVET is mapped in Figure 42. The four coloured rectangular shapes represent each of these four areas, with the resulting individual boxes representing the number of policies that show overlaps of areas.

Figure 42. **Intervention areas of national policies embedding literacy competence**
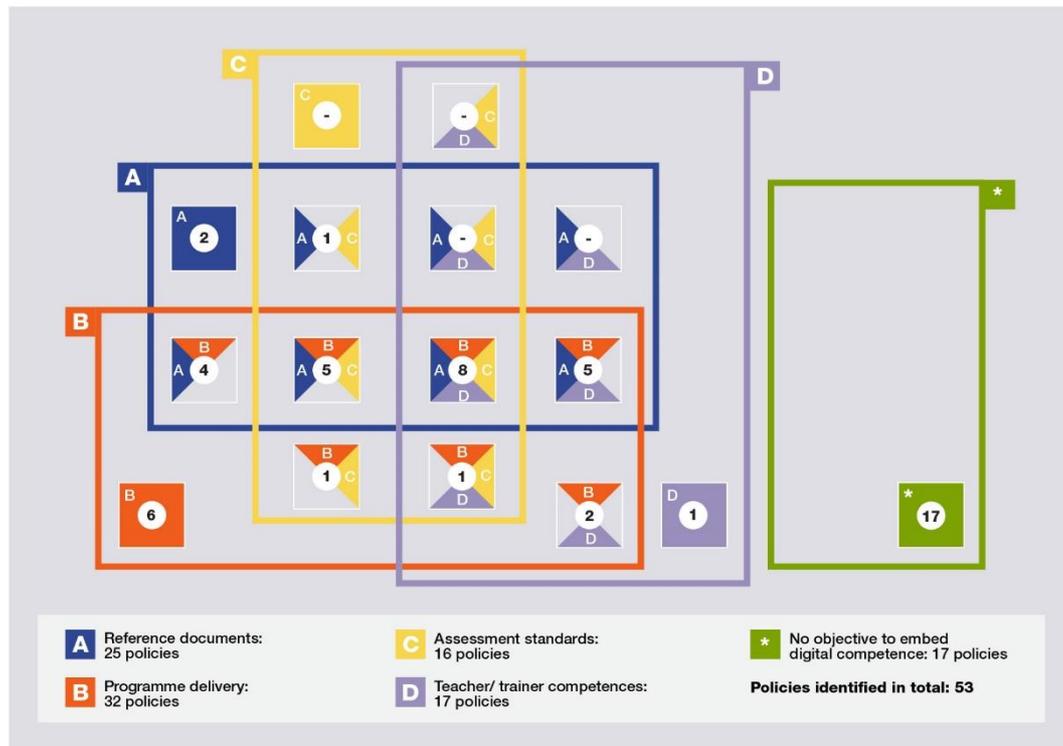
NB: N=53.
Source: Cedefop.

A total of 25 policies focus on embedding literacy competence through impacting reference documents (education and occupational standards) (blue area A). With 32 policies addressing programme delivery in IVET (orange area B), this is the area in which most policies aim to embed literacy competence. The figure shows considerable overlaps between policies that address both reference documents (A) and programme delivery (B), with 23 policies addressing both. There are 17 policies focusing on teacher/trainer training (violet area D) and 16 aiming to revise assessment standards (yellow area C). 17 policies did not aim to embed literacy competence.

In practice, most policies aimed to embed literacy competence in more than one area; eight of them aimed to do so in all four areas of intervention.

Programme delivery

32 policies focus on embedding literacy competence by proposing changes to the delivery of IVET programmes. Within this group, two main categories can be identified. Most policies directly increase attention to literacy competence in existing courses or introduce new subjects (56%: 18 out of the 32). This can be done through introducing a minimum number of hours dedicated to literacy skills in certain programmes, or the (re)development of pedagogical material to embed literacy competence better in existing programmes. The Strategic plan for the system of technical and vocational education and training 2015-20, in Cyprus, restructured the whole IVET system, giving attention to key competences in which Greek language skills take up a central position. Syllabi were fully revised to strengthen the role of key competences. In Romania, the national Lifelong learning strategy 2015-20 introduces revised IVET curricula, combining training on literacy competence to general and specific technical competences. The remaining 14 policies (44%) propose changes to the delivery of IVET programmes more indirectly, through the development of curriculum guidelines or framework curricula. These policies have the same objective as those that change curricula directly but allow more freedom at the local and/or provider level to interpret how such guidelines are reflected in actual programmes. In Norway the Framework for basic skills (2012) followed an earlier government white paper (2003) which required the integration of key competences in all curricula. To reduce diverging approaches, the framework introduces a common framework to guide local providers on how to integrate literacy competences.

The success of both types of policy is measured by the extent to which they result in actual changes in the delivery of IVET programmes. An assessment finds that two-thirds of the policies (21 out of the 32) show observable changes in the delivery of programmes. This does not mean, however, that the remaining 11

policies were not successful; changes to IVET programmes may be subtle, may take place gradually, or a policy may be limited to voluntary guidelines that leave it up to VET providers to shape such changes. This last category is particularly relevant, as IVET providers have increasing autonomy to design programmes (Cedefop, 2018). This autonomy is given within the broad curriculum framework and guidance, often further limited by the contents of reference documents (education and occupational standards), and with due respect to assessment standards. In these cases, it can be expected that national policies do not always directly concentrate on the inclusion of literacy competence components in programmes, even though this is still the main desirable outcome. The policy for quality arrangements in the Netherlands presents a meaningful framework for increasing the quality of education and gives attention to literacy in a context with considerable autonomy for VET providers. Policy actions in this context are neither enforceable nor immediate and may instead be designed only to nudge VET providers in a certain direction. The same is true for the Austrian Decree on Literacy Education (2013), which encourages schools to develop and prepare local responses to the provisions of the decree. The decree itself did not set specific aims and objectives that could be measured. Instead, it foresees that each school develops a strategy for literacy education that is in accordance with the specifications made in the decree, in so-called pedagogical conferences, bringing together all teachers, school staff and headmasters. This requires developing literacy skills not only in dedicated German classes but equally so in subject-specific contexts.

5.1.3.2. *Reference documents (education and occupational standards)*

A second group of policies seeks to embed literacy competence in IVET through revising reference documents (education and occupational standards) of IVET qualifications (25 policies). These are split into two broad categories. The first consists of policies that develop or revise reference documents to position literacy competence better (56%: 14 out of the 25 policies). For these, the primary objective is to (re)structure a formal competence framework, in which literacy competence is further defined and clarified, and subsequently translated to specific learning outcomes descriptions that are applied to individual qualifications. The Latvian education development guidelines 2014-20 (launched in 2012) develop new education standards for literacy. The second category of policies embeds literacy competence in IVET through revising reference documents while restructuring the broader IVET system (44%, 11 policies). These policies consist of broader reforms for the IVET sector (such as the introduction of a learning outcomes approach or revising reference documents to take better account of modular learning), which

also offer an opportunity to include new requirements for literacy skills. In Poland the Lifelong learning strategy 2013-20 introduced major reform of the main reference documents for VET (the same for all VET programmes) and while doing so updated the requirements for literacy competence.

National policies of this sort may inspire changes to the description of literacy competence in national guidance documents and frameworks. Through such structures, policies contribute to (re)formulation of learning outcomes at the national level. However, it often takes some time before such revisions have an observable impact on IVET, and such delays should not be understood as failures/challenges in policy implementation. The process of revising the specific content of individual qualification profiles and learning-outcome definitions tends to be done according to a fixed and more long-term schedule, and often involves social partners and school representatives. An example is the 2012 update of the Norwegian framework of basic skills. Its revision provides the template for reference documents to update the existing learning outcomes descriptions for literacy competence (and other key competences) of individual IVET qualifications. However, these individual qualifications are not all rewritten overnight. Instead, qualifications are updated according to a longer-term schedule; when one is due for revision, the revised framework of basic skills influences how literacy competence is mentioned in learning outcomes descriptions.

5.1.3.3. *Teacher/ trainer competences*

Policies recognise the importance of the teacher's role in increasing literacy competence (17 policies). To improve teacher capacity to promote literacy competence, policies consider a number of possible approaches, ranging from additional training to in-service teachers (53%: nine out of 17), revision to the requirements for new teachers (12%: two out of 17) and additional support in incorporating associated changes to curricula through pedagogical guides or learning material for teachers (35%: six out of 17). Structural measures that focus on the curricula for initial teacher training consist of long-term activities that may yield results only in the longer-term. The Bulgarian National strategy for enhancement and increasing literacy 2014-20 introduces increased qualification requirements for teachers in relation to their own literacy skills. While this type of policy is not often found, it is a crucial element of broader restructuring of IVET programmes; these could not be effectively implemented without being accompanied by changes to the programmes preparing teachers.

Policies aiming to support teachers are more practical, often leading to short-term results. The Swedish Government decision to promote training in literacy and language development (2013) provides Swedish language teachers with concrete

methods to improve students' reading and writing skills. In Ireland, the National strategy of embedding literacy and numeracy consists of an action plan that seeks to provide IVET teachers and trainers with guidance materials and best practice examples on how to embed literacy in their programmes. In Latvia, the *Education development guidelines 2014-20* consist of concrete policy actions to strengthen teachers' capacities to support students with weak literacy skills. In Denmark, the 2014 VET reform sought to improve VET in all four areas, but particularly succeeded in improving VET teacher pedagogic skills. Results show that policies that focus on teacher training are often effective, while such practical support measures produce results in the short term.

5.1.3.4. *Revision of assessment standards*

Key competence policies are embedding literacy competence into IVET through revision of assessment standards (16 policies). Within this group two types can be identified: those that introduce new exams focused on literacy competence (25%: four out of 16 policies), and the remaining polices, which revise the standards to existing assessment procedures (75%: 12 out of 16 policies). In Bulgaria, the National strategy for enhancement and increasing literacy 2014-20 seeks to increase literacy levels through introducing external evaluation of functional literacy. The area of revising assessment standards is addressed by the lowest number of policies, but a review of these policies also shows that those with this objective less often produce visible results than policies focusing on other areas.

To understand better why policies face more difficulties revising assessment standards than other areas, we take a closer look at the various policies. For 10 out of the 16 (63%), national policies that propose revisions to assessment standards do so without outlining what should replace them. This means that policies take the first step in revising but do not necessarily ensure that literacy competence is more visibly reflected. Though this appears contradictory, it is the result of how VET is organised. Control over assessment of IVET qualifications is often decentralised to schools or local employer boards. These local assessment boards may prioritise the assessment of occupation-specific competences over literacy competence that is not occupation-specific. Even if national policies are put in place to increase the importance of key competence over occupation-specific competences, these may face opposition from stakeholders. In UK-England the Post-16 skills plan (2016) proposes to embed the assessment of English language skills into the vocational qualification. However, at this moment it remains to be seen whether and how this affects the way literacy competence is included in the standards by employer panels responsible for assessment.

While the level and scope of social partner involvement in IVET assessments varies substantially in the various EU+ countries, their role is generally more visible in setting and assessing learning outcomes, and less so in programme delivery and teacher training, particularly in school-based education (⁴⁸). This means that policies that seek to revise assessment standards need to take this into account, and often fail in rapidly and directly responding to newly reviewed guidelines. In some cases, reviewing guidelines that focus on key competences with no immediate job-specific orientation may even deliberately be left aside by these local bodies in revising the assessment practice. Such policies have more chance of success when combining revisions to assessment standards with changes to reference documents or programme delivery. When changes to reference documents or programme delivery elements are implemented, there is also a clearer need for assessment standards to be adjusted accordingly. This underlines the importance of integrated policies that target embedding literacy competence in IVET from multiple directions. In France, the 2013 orientation and programming law on education transformed assessment of learning outcomes for obtaining the vocational baccalaureate. These changes to assessment are implemented together with broader changes to reference documents (the description of learning outcomes) and the delivery of IVET programmes. This is quite common and shows an effective approach that also affects the way assessment standards are revised.

5.1.3.5. *Policies not embedding literacy competence*

Policies promoting literacy competence without seeking to embed it (17 policies) differ considerably; they can often be broad national policies. Their success should not be assessed based on the extent to which they result in changes in IVET. Several policies in this group introduce key competences, and the meaning of literacy competence more specifically, clearing the way for more specific policy actions and strategies after they are published.

The Irish national skills strategy 2025, passed in 2016, covers all skill areas and all sections of the education and training system and has a ten-year timeframe. Despite its broad focus, it also underlines the need to improve literacy skills. Given its long-term objectives and no operationalised actions, the best measure to assess its effectiveness is the existence of follow-up policy actions such as the strategy for FET professional development 2017-19, and the SOLAS report on

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(⁴⁸) This study included a balance of policies focusing on school-based and work-based IVET. However national policies, particularly those on key competences, tend to focus on school-based IVET where these policies can influence programme delivery and teaching training requirements. In work-based learning programmes, embedding key competences tends to be addressed in the common – often school-based – core part of the programme.

literacy and numeracy. Based on this measure, many of the policies in this category can be considered successful. For instance, the Framework for the education strategy for Malta 2014-20 also led to more specific policies, such as the national Literacy strategy for all (2014), which set up a national literacy agency to oversee the implementation of a more specific literacy policy.

It is also possible for policies aiming only to promote literacy competence to have a certain effect on its embedding in IVET. The Dutch revision of the qualification structure (2014) does not aim at embedding literacy competence (nor key competences more broadly) into IVET but at restructuring the way qualifications are described: it does not seek to change the content of qualifications but proposes a restructuring of them. The success of these policies should be measured by the extent to which they restructure qualification profiles, not the extent to which they embeds literacy competence (or other key competences). However, this does not mean that it will have no effect on embedding; by restructuring the way that qualifications are described, the policy increases the prominence of literacy competence in qualification profiles.

5.2. Literacy competence in qualification types

Key messages:
- In the 78 qualification types that comprise all IVET qualifications in the EU+ countries, the most prevalent way to include literacy competence is as stand-alone subject/module. Literacy competence is included in all qualification types; however, it is not always stated in reference documents and it is not always assessed.
    - o In school-based settings, literacy competence is mainly delivered as a stand-alone subject/module (27 of 49 school-based qualification types). In these cases, literacy is a general education subject taken by IVET students from different disciplines and sectors.
    - o In school-based qualification types that include work-based learning in school workshops and laboratories, it is mainly delivered both as a stand-alone subject/module and integrated in occupation-specific subjects (12 of 23 qualification types). Literacy is a general education subject but contextualised in the work environment.
    - o In apprenticeship programmes, literacy competence is mainly integrated in other subjects or delivered both as a stand-alone subject/module and integrated in other subjects/modules.

In this section, the inclusion of literacy competence in the 78 IVET qualification types identified across the 35 VET systems under study is discussed (^{49}) (Figure 43). Qualification type refers to a group or cluster of qualifications within a country that share specific characteristics.

Figure 43.   **Literacy competence in IVET qualification types**
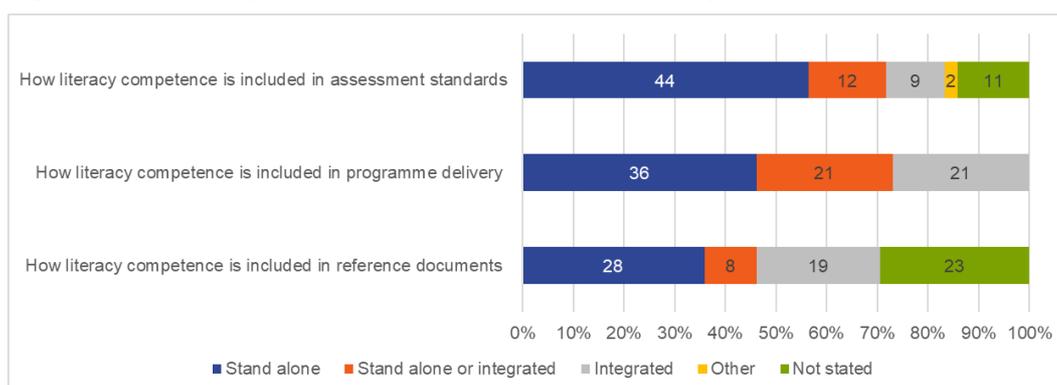
NB: N=78 qualification types. 'Other' refers to the Belgium Flemish Community situation where
            assessment is the responsibility of the school. There is no national approach.
Source: Cedefop.

When looking at the 78 qualification types, literacy competence is delivered in all programmes, though not explicitly stated in some reference documents (23 types) and assessment standards (11 types). Although attention is given to literacy competence in programme delivery, it may not be assessed in some cases.

5.2.1.   Literacy competence in reference documents

As shown in Figure 43, reference documents for 28 qualification types (36%) describe literacy competence as a stand-alone competence in the learning outcomes and educational objectives. This is the case in Austria (VET school qualification, EQF level 4) where German is compulsory in all vocational schools.

Eight qualification types (10%) describe literacy competence as both stand-alone subject/module and integrated in other subjects/modules, or in the occupation-specific section of the qualification file. Reference documents of 19 qualification types (24%) have literacy competence integrated in other sets of learning outcomes and educational objectives, such as learning outcomes on occupational practice. In 23 qualification types (29%), literacy competence is not included in the reference documents.

(^{49}) In line with the dimensions presented in the analytical framework (Chapter 1), apart
            from teacher/trainer training.

5.2.2. Literacy competence in programme delivery

As shown in Figure 43, literacy competence is delivered as a stand-alone subject/module in the programmes of 36 qualification types (46%) in 18 countries. In Denmark, the basic (common) part of the vocational curriculum consists of a separate course for Danish.

In the programmes of 21 qualification types (27%) literacy competence is integrated in other courses. In the Flemish Community of Belgium, literacy competence is integrated in the *project algemene vakken* (project-common subjects). This covers learning outcomes on literacy, numeracy, digital/information, organisation management, time and space-consciousness, societal and ethic-consciousness, resilience and responsibility. In 27% of cases (21 qualification types), literacy competence is delivered both as stand-alone and integrated in other subjects.

Literacy competence is more often delivered as a stand-alone module in qualification types offered in a school-based setting (27 of 49 school-based types). In these cases, literacy is a general education course taken by IVET students from different disciplines and sectors. In school-based qualification types that include work-based learning in school workshops and laboratories it is mainly delivered as a stand-alone subject/module or integrated in occupation-specific subjects. Literacy is a general education subject but is also contextualised in the work environment. In apprenticeship programmes literacy competence is mainly integrated in other subjects or delivered both as a stand-alone subject and integrated.

Although many countries are making the transition to offering key competences more transversally, they are still more often defined separately and offered as such. In Romania, for all three qualification types literacy is conceptually treated as a transversal competence taught and assessed together with technical competences (or other key competences). However, literacy competence is usually delivered as a stand-alone subject/module available for learners from different programmes, grouped in occupational sectors/areas. The common curriculum to all programmes in upper secondary education includes general stand-alone subjects/modules (Romanian or other mother tongue when needed, one or two foreign languages and ICT) designed to enable permeability to the baccalaureate and higher education. This is also the case is other countries, such as Belgium and the Netherlands. This seems to suggest conflict between an occupational focus for which embedding literacy is more beneficial, and an educational focus for which literacy as a separate subject is more beneficial for academic performance and further learning at higher levels.

5.2.3. Literacy competence in assessment of standards

Countries apply different assessment methods in IVET, even differentiating between qualification types. Assessment can be based on final assessment or certification examination at the end of the training programme, or on the accumulation of parts of the qualification – modules, units, and credits – without final assessment. Final assessment is done by different methods, such as written, oral and/or practical examination.

As shown in Figure 43, 56% (44 qualification types) assess literacy competence as a stand-alone subject/module. In 15% of cases (12 qualification types), literacy competence is assessed both as a stand-alone subject/module and as part of the subjects in which it is integrated. The assessment can be continuous, done by teachers of individual subjects, and part of a final examination. In 12% of qualification types (nine), assessment of literacy competence is integrated with other competences. In 14% of qualification types (11), literacy competence is not specifically assessed.

Mapping how literacy competence is assessed indicated that the assessment is mainly done separately; sometimes it is even part of school-leaving examinations giving access to higher education. Literacy assessment as integrated in occupation-oriented subjects takes place in only a few qualification types and countries.

No assessment was made of whether literacy is a 'pure' key competence or whether it is required for the job-specific practice. Nonetheless, practitioners of any occupation need to be able to read and write. Literacy is broadly regarded by interviewed stakeholders as a foundation for other competences and is therefore less directly linked to occupational practice. This is also evident in that literacy is usually delivered and assessed separately from the occupation-specific competences.

CHAPTER 6.
EU priorities and national objectives supporting key competences

Key messages:

- Most countries have policy documents published in the last decade. They include statements, on national objectives supporting key competence inclusion in VET.
- Nationally expressed objectives include references to broad concepts ('key competences'; '21st century skills'; 'foundational skills'; and 'basic skills') or specific key competences.
- There are limited direct references in national objectives to the Bruges communiqué, Riga conclusions or the ET 2020 strategic frameworks.

This chapter discusses how key EU agenda-setting documents influence national objectives and reforms related to key competences: the 2006 Council recommendation on key competences for lifelong learning, Education and training 2020, the Bruges communiqué (2010) and the Riga conclusions (2015). The relationship between national objectives and key competences is discussed.

6.1. Education and training 2020 and references to key competences in national objectives

In the context of the strategic framework ET 2020, Member States agreed to exchange best practices and learn from one another in achieving six targets by 2020 ([50]). A series of country-specific recommendations are provided by the European Commission to the Member States, based on country analysis in various policy areas (European Semester).

Member States that refer in their ET 2020 national objectives to key competences in VET are Bulgaria, Latvia, Lithuania, Hungary, Netherlands,

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([50]) https://ec.europa.eu/education/policy/strategic-framework/et-monitor_en:
1. to reduce the early leavers from education and training to less than 10%;
2. to achieve 40% tertiary educational in the age group 30 to 34 year-olds;
3. to achieve 95% participation in early childhood education and care;
4. to reduce underachievement in reading, mathematics and science to less than 15%;
5. to reach an employment rate of recent graduates of 82%;
6. to reach 15% adult participation in learning.

Austria and Romania. In Austria, the reference is to the EU key target that the proportion of 15-years-olds with insufficient literacy should be less than 15%. The same is the case in Bulgaria, Latvia and Lithuania. Latvia's framework document for education development 2020 includes objectives on literacy competence scores in PISA tests ([51]). In the Netherlands, key competences are not referred to in the key objectives but are implied in separate objectives. In the fourth strategic objective (enhancing creativity and innovation, including entrepreneurship, at all levels of education and training), the Netherlands has devoted attention to broader skills sets, including ICT (21st century skills); teachers are the cornerstone in this last area. Increased attention to language and mathematics is required and needs to be stimulated through centralised examinations for these subjects ([52]).

6.2. Key competences in national objectives

Most countries have published documents in the last decade that include statements expressing national objectives on key competence integration in VET. These documents can be broader strategies, looking at a set of key competences, or target only a few, or one.

National objectives are included in different document types. In seven countries (Bulgaria, Czechia, Greece, Cyprus, Austria, Slovenia and Finland) they are expressed in broad lifelong learning policies. Closely related, the national perspective on key competence integration in VET is indicated in broader educational priorities, strategies and objectives in 10 countries (Flemish Community of Belgium, Croatia, Iceland, Italy, Latvia, Lithuania, Malta, Romania, Spain, and UK-England). The Croatian education strategy (2014), as example, states that key competences are the basis for a lifelong learning concept. Two approaches ensure the acquisition of key competences: development of curricula, processes, programmes and educational outcomes at all levels of education; and strengthening the acquisition of competences through non-formal and informal types of lifelong learning. The objective for external assessment of learning outcomes states that key competence level also needs to be assessed: they are an objective in adult education in Croatia to achieve continual lifelong learning.

([51]) Latvia's framework document for education development 2020 sets the following objectives: increase the percentage of 15-year-olds who reach the high levels of 5 and 6 in PISA tests by 2020 to 7% in literacy competence and 8% in mathematics and natural sciences; and reduce the percentage of low achievers to 13% in literacy, 15% in mathematics, and 10% in natural sciences.

([52]) European Commission (2014b).

Many national objectives refer implicitly to some key competences. The overarching objective of Lithuania's National education strategy 2013-20 (2013) is to make education a sustainable foundation for improving public well-being for a dynamic and independent individual, who creates his/her persona, the country's future, and the global future with personal responsibility and demonstrated solidarity.

National objectives on key competences in VET are often stated in VET reform agendas. This is the case in the Flemish Community of Belgium, Croatia, Cyprus, Denmark, Norway, Slovakia and UK-Northern Ireland. Slovakia has revised its strategy to refer to key competences. Box 33 has examples of diverse approaches in the EU+ countries to addressing key competences in national objectives.

Box 33.   **Examples of national objectives in relation to key competences VET (focus on literacy, multilingual and digital competences)**

Czechia: The national strategy for education policy, which runs until 2020 (adopted in 2014), aims to strengthen the common basis in VET programmes in secondary education with a vocational certificate and secondary education with a *maturita* examination. It focuses on the development of basic knowledge (especially literacy and digital competences), skills, abilities and attitudes, in the interest of long-term employability and success in further studies and in their personal lives.

Spain: Literacy and digital competences are embedded in the general objectives and principles of the VET system. The objectives of all IVET programmes are effective communication in personal and professional life and using ICT and foreign languages as defined in regulation Royal Decree 1147/2011, Art 3.i. Order ECD/65/2015.

Source: Cedefop.

Several countries that have not expressed national objectives for integrating key competences in the last decade had done so at earlier stages. UK-Scotland has had core skills (key competences) as a feature of VET in since the 1980s, developed in response to employer concerns that school and college leavers did not have the generic skills required in the workplace. Frameworks and approaches have been developed since then and have survived because the original principles still hold. The five core skills are: working with others, problem-solving, communication, ICT, and numeracy.

6.3.   References in national policies to Bruges communiqué and Riga conclusions

The 2010 Bruges communiqué confirmed the importance of key competences in VET by stating that learners should acquire them together with occupation-related

skills. Signatory countries to the Bruges communiqué (28 Member States, Iceland and Norway) agreed to ensure that key competences are integrated into IVET curricula and to develop appropriate means of assessment (Council of the European Union; European Commission, 2010).

The importance of key competences was reinforced by the Riga conclusions (Council of the European Union; European Commission, 2015a) which further strengthen them in VET programmes. The creation of opportunities to acquire key competences in initial and continuous VET was specified as one of five medium-term deliverables for the period 2015 to 2020 (Council of the European Union; European Commission, 2015a). The joint report on implementation of the strategic framework for European cooperation in education and training (ET 2020) defined strengthening developing transversal skills and key competences as one issue within six priority areas (Council of the European Union; European Commission, 2015b).

The extent to which the objectives on key competences in two main agenda-setting European documents – Bruges communiqué and Riga conclusions – are referred to in national policy developments is discussed in the following sections.

6.3.1. Bruges communiqué objectives in national policy

The strategic objective of the Bruges communiqué 2010 is that IVET should equip learners with key competences and specific vocational skills. Participating countries should ensure that key competences are integrated into IVET curricula and develop appropriate means of assessment (Council of the European Union; European Commission, 2010).

National policy documents only occasionally refer directly to the Bruges communiqué, as in the Maltese National vocational education and training policy section on mapping the Bruges communiqué to gauge Malta's achievements. Reforms of VET systems are often in line with the Bruges communiqué and refer to key competence integration in VET, or are assessed to lead to a stronger position of key competences in VET provision after 2011. This is the case in 20 of the 35 EU+ VET systems (57%): the Flemish Community of Belgium, Cyprus, Czechia, Denmark, Estonia, Finland, France, Croatia, Ireland, Italy, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia, Sweden, UK-England and UK-Scotland. It is affirmed by the 2015 Cedefop monitoring report (Cedefop, 2015) that about half of the EU+ countries have included key competences in their national qualifications frameworks (NQF) descriptors.

Box 34.   **Example of the role of the Bruges communiqué in design and
               development of national policies on key competence promotion in IVET**

Denmark: The Bruges communiqué plays a central role in many objectives and
related actions at national level, especially in the VET 2014 reform. In addition to
raised entry requirements for VET, the reform mentions that it is central for individuals
to have basic literacy and math skills as central to the individuals' ability to complete
VET and the ability to offer a high-quality VET education for all kind of students. It is
an objective in the VET reform that the quality of teaching must be improved and all
pupils must meet appropriate challenges. This reform includes a focus on fostering
the use of ICT in VET, which is also mentioned in the Strategy for digital vocational
education.

Source: Cedefop.

6.3.2.   Riga conclusions in national policies

The strategic objectives of the Bruges communiqué were confirmed in the Riga
conclusions 2015. One of its medium-term deliverables for the period 2015-20 is
specified as to strengthen key competences in VET curricula and provide more
effective opportunities to acquire or develop those skills through IVET and CVET.

National policy documents only occasionally refer directly to the Riga
conclusions though most VET policies are in line with their priorities (Box 35).

Box 35.   **Influence of Riga conclusions on promoting key competences in IVET**

Latvia
In line with the Riga conclusions, the approach of providers (VET institutions)
assumes that programmes include key competences to the extent that
learners can acquire and develop those skills through VET.
Lithuania
Legislative developments in VET reflect the five medium-term deliverables in
the Riga conclusions. Policy documents and legislation are being developed
to strengthen key competences and to provide opportunities to develop them
through the VET system.
Sweden
The National Agency for Education states in its report from 2017 that the
conclusions and goals of the Riga conclusions are well in line with national
priorities.

Source: Cedefop.

In many countries, these reforms refer to key competence integration in VET,
as mentioned in the Riga conclusions, or are assessed to lead to a stronger
position of key competences in VET provision after 2015. This is the case in IVET
in 17 of the 35 EU+ systems (49%): Croatia, Cyprus, Czechia, Estonia, Finland,
France, Ireland, Italy, Latvia, Lithuania, Malta, Poland, Romania, Slovenia,

Sweden, UK-Northern Ireland and UK-Scotland. In countries adopting VET reforms after the Riga conclusions, the influence is often more implicit than explicit in their VET systems, particularly on key competences.

CHAPTER 7.
Conclusions across key competences

7.1. Policies promoting literacy, multilingual and digital competences in IVET: similarities and differences

Key messages:

- There were 79 policies that promote literacy, multilingual and/or digital competence in IVET in 2011-18 in EU-27, Iceland, Norway and the UK.
- Of these policies, most promote digital competence.
- Digital competence is also more often addressed by separate national policies (13) addressing one competence, compared with literacy and multilingual competences (four and three policies respectively) that are usually promoted by wider scope policies.
- 53% of policies promoting literacy focus exclusively in IVET; this share is smaller for multilingual and digital competences (41%).
- 68% of policies promoting literacy competence, 67% of policies promoting digital competence and 59% of policies promoting multilingual competence have an explicit objective to embed these competences in IVET. The rest promote (popularise) the selected key competences without embedding them in IVET.
- Promoting the selected key competences in IVET is linked to broader societal objectives. The policies on multilingual competence have, compared to the other competences, more often a broader objective related to supporting lifelong learning (37%). Social inclusion is slightly more often the broader objective of policies promoting literacy competence (25%). Policies promoting digital competence have employability as the most common broader societal objective (33%).
- In the reference period (2011-18), most policies were adopted in 2014 and 2015. The peak can be explained by the adoption of many strategies with a 2014-20 timeframe and is also linked to the EU policy planning schedule (2007-13; 2014-20).
- National policies only occasionally refer directly to the EU VET agenda, including Bruges communiqué (2011) and the Riga conclusions (2015). However, policies tend to be in line/follow the direction provided by these EU policy documents. Almost half of policies refer to other EU and international initiatives, especially those promoting multilingual competence.

The study identified 79 policies that promote literacy, multilingual and/or digital competence in IVET, as shown in Figure 44.

Figure 44.   **National policies promoting literacy, multilingual and digital competences**

In total: 79 policies identified

Promoting literacy competences
In total: 53 policies

Promoting multilingual competences
In total: 41 policies

4

8

31

3

(4 of these 8 also promote others than the three selected KCs)

10

20

3

(7 of these 20 also promote others than the three selected KCs)

Promoting digital competence
In total: 64 policies
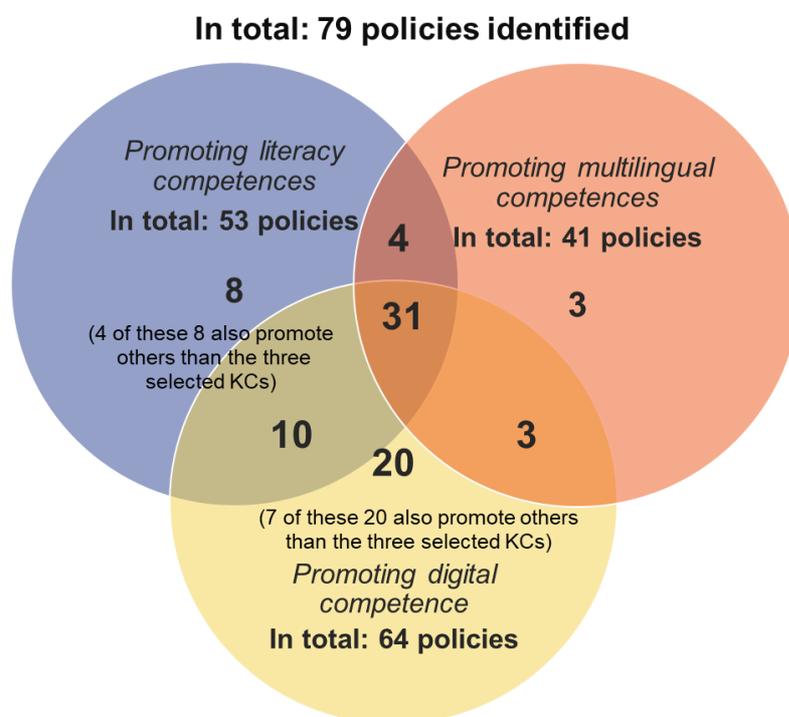
NB: N=79.
Source: Cedefop.

Of these 79 policies, 53 promote literacy, 41 multilingual competence, and 64 promote digital competence. Policies often target multiple key competences, with a total of 31 promoting all three studied key competences at once. For the purpose of presentation, the figure does not include how these policies address additional key competences (cultural awareness and expression, personal social and learning to learn, mathematical competence and competence in science, technology and engineering, citizenship, and entrepreneurship), but such overlaps are equally common ([53]). Only 13 policies exclusively promote digital competence; four exclusively promote literacy competence and three exclusively promote multilingual competence. This overlap in the three key competences also has implications for analysis of the policies. Chapters 3, 4 and 5 of this report often show similar findings for the three selected key competences under study. This is a logical consequence of the overlapping policies.

Policies promoting key competences also tend to cover education more broadly rather than focusing exclusively on VET; in half, the scope is wider than

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([53]) For instance, among the 31 policies that address all three key competences under study, 22 address all eight competences.

IVET. Of policies that promote literacy competence, 53% explicitly focus on IVET. This share is lower for multilingual competence (41%) and digital competence (41%) as shown in Figure 45. Even if IVET is mentioned in the policies, there are no specific activities that separate the inclusion of the key competence in the IVET system from the approach, including broader education sector. Examples of these policies are lifelong learning strategies and the introduction of broader curriculum frameworks. While it is possible that these policies still influence the embedding of key competences in VET, this is not their explicit objective.

Figure 45. **Policies focusing on IVET**
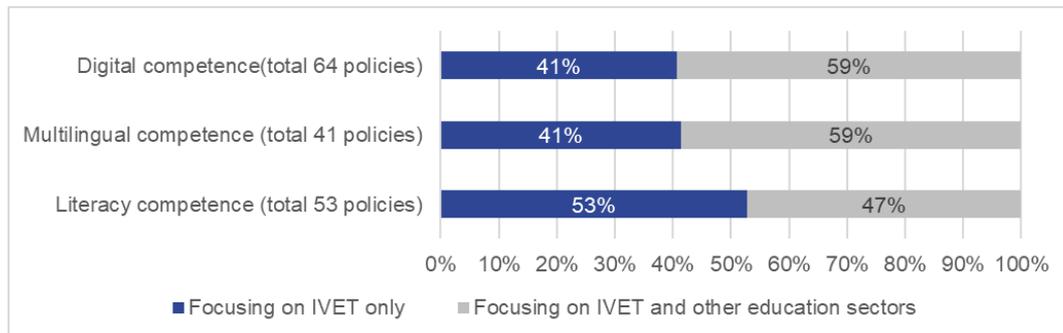
NB: N=79.
Source: Cedefop.

Policy objectives vary substantially. This study distinguishes between policies that promote key competences with or without an objective to embed them into IVET ([54]). As presented in Figure 46, 36 of the 53 policies (68%) define the objective to embed literacy competence in IVET. For multilingual competence, the figure is 24 of the 41 policies (59%) and for digital competence, 43 of the 64 policies (67%). Comparing the three key competences, policies targeting digital and literacy competences more often focus on embedding them into IVET compared to policies promoting multilingual competence. The last of these is often referred to in policies without proposing a real change to embedding it in IVET.

([54]) Embedding is defined as the activity undertaken by public policies to increase the extent to which key competences are included in IVET, through changes in reference documents (education and occupational standards), programme delivery, teacher/trainer training and assessment standards.

Figure 46. **Policies with and without an explicit objective to embed literacy, multilingual and digital competence in IVET**

	With objective to embed the key competence	No explicit objective to embed
Digital competence (total 64 policies promote the competence)	67%	33%
Multilingual competence (total 41 policies promote the competence)	59%	41%
Literacy competence (total 53 policies promote the competence)	68%	32%
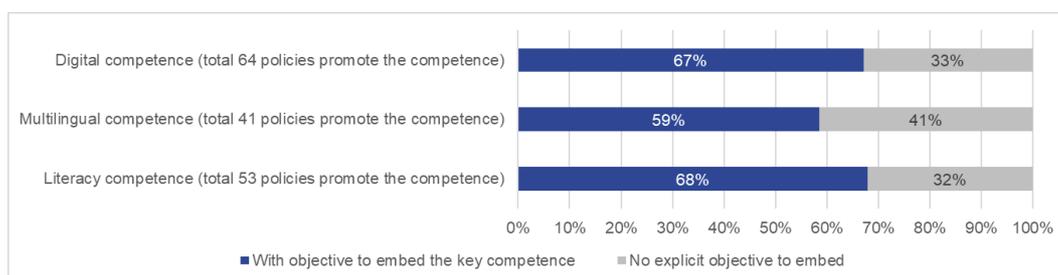
NB: N=79.
Source: Cedefop.

Promoting key competences in IVET is linked to broader societal goals, such as personal development, lifelong learning, employability and social inclusion. Policies on multilingual competence more often relate to supporting lifelong learning (37% of the policies) compared to the other two. This can be understood from the perspective that multilingual competence comes into play in entering higher education programmes. Social inclusion is slightly more often the broader objective of policies promoting literacy competence compared to the others (25%). Policies promoting digital competence more often have employability as the related broader societal objective (33%), as well as developing citizenship skills (14% of the policies). Digital competence is seen as needed both in the labour market and in society.

Policy types vary across countries. A distinction is made between legislative acts, strategies, implementing acts, and other national/regional level documents (such as, guidance documents). Strategies are generally less specific and operational compared to legislative acts or implementing acts. Overall, strategies are more often selected than other policy forms (56% of the policies are strategies), but there are differences between the three key competences. 61% of policies that promote digital competence are strategies, while this is the case in only 44% promoting multilingual competence and 47% promoting literacy competence (Figure 47).

Figure 47. **Policy types promoting literacy, multilingual and digital competences in IVET**
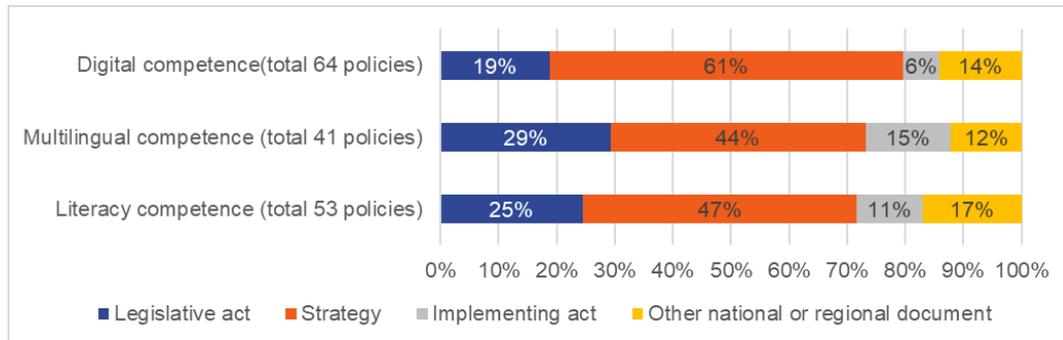
NB: N=79.
Source: Cedefop.

In the reference period (2011-18), most policies were adopted in 2014 (18) and 2015 (12). Ten policies were adopted in 2019, nine in 2013 and nine in 2017. The fewest policies were adopted in 2012 (five). The peak in 2014 is mainly explained by the adoption of many strategies with the 2014-20 timeframe; it is also linked to the EU policy planning schedule (2007-13; 2014-20). Figure 48 presents the number of policies by year of adoption and key competence. For the three key competences separately, a similar pattern emerges.

Figure 48. **Policies by year of adoption and key competence**

	2011	2012	2013	2014	2015	2016	2017	2018
Literacy	7	4	6	14	8	7	3	4
Multilingual	6	2	5	11	8	4	3	2
Digital	7	3	5	16	9	10	8	6
TOTAL (not the sum of policies as they overlap):	9	5	9	18	12	10	9	7

Source: Cedefop.

National policies only occasionally refer directly to the EU VET agenda, including Bruges communiqué (2011) and the Riga conclusions (2015). However, policies tend to be in line/follow the direction provided by these EU policy documents. Almost half of policies, however, refer to other EU and international initiatives, especially those promoting multilingual competence.

In total, 46% of policies refer to EU and other international initiatives. The share is the highest for policies focusing on multilingual competence (51%). This can be explained by the manifold reference to the CEFR as practical tool for describing the reference levels. In the policies on digital competence, reference is made to other targeted initiatives, such as the European digital agenda; e-competence, DigCompOrg, European computer driving licence. Broader references to the ET 2020 strategy and the Council recommendation on key

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competences for lifelong learning are made in policies supporting all three key competences.

7.2. Policy approaches and implementation challenges

Key messages:
- Most policies aiming to embed the selected key competences focus on at least two of four intervention areas.
- The most common area of policy intervention is programme delivery.
- Policies embedding digital competence focus more often and more successfully ([55]) on teacher/trainer training than policies for other key competences.
- The challenges in implementing key competence policies are similar to those of education policies in general. They are linked to the broad scope of policies (not focusing exclusively on promoting key competences), vague and abstract objectives, lacking clearly operationalised implementation plans, making it difficult to monitor results as well as lack of resources.
- Effective policies require targeting the selected key competence, take better into account IVET sector characteristics and avoid designing the policy with general education characteristics in mind. Involvement of VET providers and other stakeholders is crucial in designing such policies.

7.2.1. Policy approaches

Policies with the objective of embedding key competences in IVET do so through four interrelated areas of intervention:

(a) reference documents (education and occupational standards) (29 policies in total);

(b) programme delivery (45 policies in total);

(c) revision of assessment standards (22 policies in total);

(d) teacher/trainer training (31 policies in total).

Irrespective of the competence, most policies combine at least two of these areas: most commonly, changes to reference documents and programme delivery. Another frequent combination is teacher/trainer training and programme delivery.

([55]) Success of policies is measured by the extent to which they result in actual changes in reference documents, delivery, assessment and/or teacher training.

Policies that target digital competences more often exclusively focus on teacher training. The figure below provides an overview per key competence.

Figure 49.   **Areas of policy intervention by key competence**
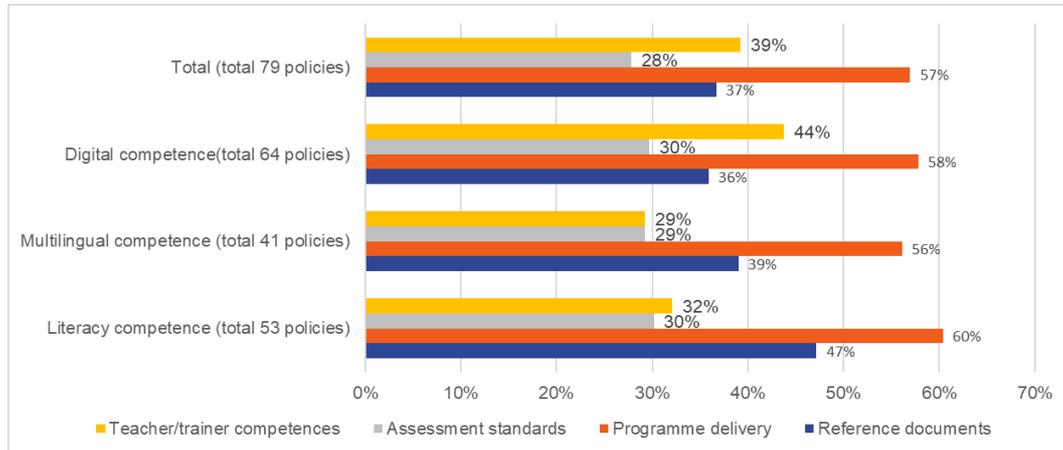
NB: N=79.
Source: Cedefop.

Analysis across the three key competences shows that policies more often succeed ([56]) in embedding them through programme delivery and teacher training compared to interventions in other areas. Embedding key competences through changes in reference documents and assessment standards tends to be more complex, involving more stakeholders. These areas are often decentralised, and stakeholders tend to focus predominantly on occupation-specific competences. National policies can propose to change assessment standards, but how this is done and to what observable changes this leads to, is not always closely monitored.

7.2.2.   Implementation challenges

Based on the analysis of several country cases (see Chapter 2 for methodology), we conclude that policies face several implementation challenges. When comparing policies across the three selected key competences that faced challenges, the following appear as most prevalent.

(a) Policies having a wider scope than IVET or not focusing exclusively on promoting key competences tend to be less efficient in achieving their objectives. However, this does not mean that such policies fail. For example, the Irish Languages connect strategy (2017) covers secondary and higher

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([56]) Success of policies is measured by the extent to which they result in actual changes in reference documents, programme delivery, assessment standards and/or teacher/ trainer training.

education. The strategy pays only limited attention to the promotion of foreign language competences in IVET, and instead defines most actions for the secondary and higher education sectors. The Flemish CLIL (2013) covered the entire secondary education sector, but the response of schools in technical and vocational education was rather limited.

(b) Setting vague and abstract objectives can also be a challenge for policies promoting key competences. The German federal strategy Education in the digital world (2016) aims to mainstream digital competence in schools, vocational education and institutions of higher education. On the one hand, the abstract formulations in the strategy require the elaboration of more specific steps that make the strategy work. However, such specific action plans are not developed at the federal level, as concrete rules and suggestions would touch upon the autonomy of educational affairs of the Federal States in terms of, for instance, classroom equipment and other learning environments and didactics and teaching methods. The operationalisation and implementation of the strategy cannot objectively be carried out centrally.

(c) Objectives are not clearly operationalised, making it difficult to monitor results and impact. For instance, in the Netherlands, the support measure 'quality arrangements VET' did not define clear objectives in terms of results and impact on the language proficiency. Further, due to the independence of the VET providers and the bilateral approach to quality arrangements, no specific objectives and activities were defined for literacy in general. Because of the voluntary nature of how improvements targeting literacy competence are implemented, no enforcement mechanism exists. In Bulgaria, the indicators identified for the national lifelong learning strategy do not provide information concerning the impact of the strategy and its action plans on the promotion of key competences in IVET.

(d) Another challenge is linked to the lack of resources and support for the implementation at VET school level. This is a hindrance in Latvia and the Flemish Community in Belgium. The Latvian *Guidelines for information society development 2014-20* aimed to modernise the curriculum and development of digital information literacy for school students and teachers. In the context of VET modernisation reform, the hardest task seems to be the development of teacher digital competence. This requires management support from IVET school leaders and teachers themselves. but there is not much extra capacity for the development of digital competence of teachers and IVET management. A substantial share of teachers is not enthusiastic about additional competence building. In the Flemish Community in Belgium,

the uptake of the CLIL policy by vocational education schools is limited because it is more challenging for them to offer it. One reason is that VET teachers and trainers (who can be flawless in the new language of instruction) might face challenges in obtaining a C1 certificate due to the academic writing style requirements. Another reason is that VET has many different courses and a low number of students: the investment is too high to offer CLIL for a limited number of students, especially when the school needs to offer the same course in Dutch as well. Publishers have no commercial interest to develop learning materials for small VET courses with limited students. The underlying barrier for VET is that the requirements are more attuned to general education, so CLIL might be less attractive for VET. A related challenge was mentioned in the context of the Austrian Directive regulating financial support for dual training of apprentices. Here it was mentioned that the application procedures for the apprenticeship grant are not well aligned with the capacities within companies (especially SMEs) in dealing with bureaucratic processes. Related to individual capacities, in France, there is a lack of incentives for teachers to implement school reform policy.

(e) Involvement and coordination between stakeholders in the implementation of policies is another challenge. In Iceland, the white paper on education reform had the objective that 90% of compulsory school students should reach the minimum level of reading instead of the present 79% by 2018. The strategy also emphasised changes to competence requirements in VET. The Icelandic National Audit Office published a report on VET programmes in 2017, indicating that promised improvements in VET programmes in the country have largely failed. Instead of strengthening VET programmes and increasing the number of students, programmes have become weaker and students fewer. The reasons are the scope of the administration involved in the implementation process. Four parties are responsible for implementing changes in VET programmes in Iceland: the education ministry and directorate, trade unions and learning providers. The many stakeholders have different agendas. In Estonia, a hindrance to the implementation of the Programme of digital focus is that stakeholders (teachers and students) were insufficiently involved in policy design and development.

(f) Contextual factors are insufficiently considered in designing policies, as in uneven development in rural and urban areas in countries. In Romania, policy implementation is hampered by the discrepancies between more developed areas and those with vulnerable population, especially in the rural/urban divide. These discrepancies introduce important challenges in coherent planning of national actions in IVET. Equipment and internet access are

scarce in rural areas, not only in schools but also for the general population; digital competence levels are much lower not only for the population but also for teachers and trainers. In France, the implementation of foreign language policy found the context more challenging than expected. Students enrolled in vocational schools have lower average educational outcomes in literacy, which is an obstacle to get the expected learning outcomes in foreign languages.

Challenges occur at different stages of the policy cycle: preparation and development; implementation (planning and conducting activities); and monitoring and follow-up. Looking at the possible areas of failure, the policies cover all four identified areas: context; stakeholder engagement, commitment and ownership; coordination, management and political priority; and resources. They also go beyond them, as in the dependency on funding regulations and the lack of human resources and commitment for implementing policies.

The identified implementation challenges point to lessons learned for designing and implementing future policies that focus on promoting and embedding key competences. Future policies need to be more targeted at the selected key competence, the IVET sector and embedding competences instead of only mentioning them; they should have a specific objective to increase the extent to which key competences are included in IVET. Also, IVET sector characteristics need to be better considered to avoid designing the policy with general education characteristics in mind. Sufficient resources are as crucial as support for the policy implementation at VET provider level. There is a need to ensure coordination between stakeholders in the implementation and consider contextual factors and regional differences in policy design and implementation.

7.3. Programmes and qualification types: similarities and differences

Key messages:
- The study identified 78 qualification types in the EU-27, Norway, Iceland and the UK. Literacy competence is included in all qualification types in all the countries; multilingual and digital competences are included in almost all qualification types. For literacy and multilingual competence, stand-alone subjects/modules are the most prevalent approach to inclusion in IVET. For digital competence, integration is key.
- Multilingual competence is more often provided at EQF level 4 compared to other levels.

- There are differences by sector in how digital and multilingual competences are perceived at individual VET programme level: as occupation-specific or 'pure'.

The study identified 78 qualification types in the EU-27, Norway, Iceland and the UK ([57]). Qualification types allow general conclusions on how literacy, multilingual and digital competences are included in IVET without focusing on sectoral differences. Literacy competence is generally included in all qualification types; multilingual competence is included in all but nine qualification types and digital competence in all but five. There is a difference in how the three selected key competences are included in IVET: as a stand-alone subject/module or integrated in other subjects/modules. For literacy and multilingual competences, stand-alone is the most common way of inclusion. Digital competence is more often included in IVET in an integrated way, combined with other subjects/modules.

This is also confirmed by the analysis of the individual programme sample in accommodation/food service, manufacturing and construction sectors (Figure 50).

Figure 50. **Delivery mode of multilingual and digital competences**
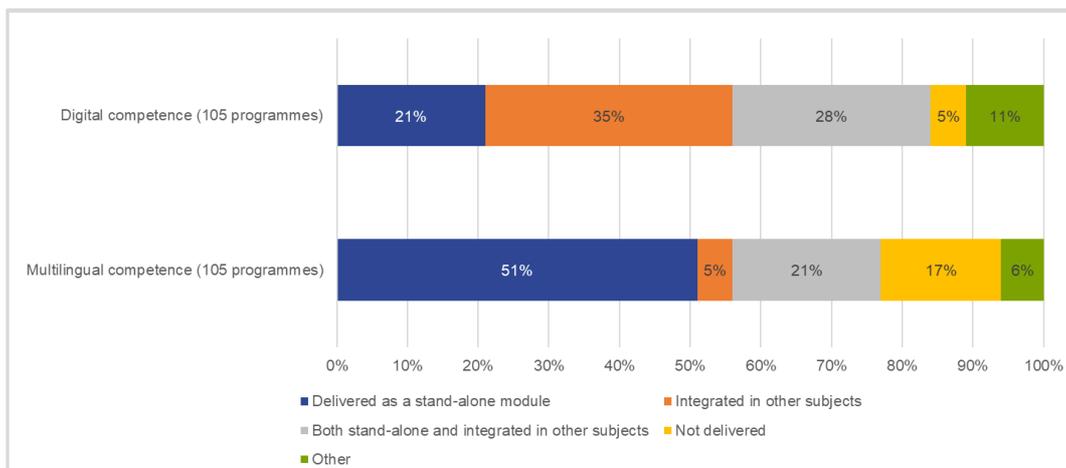
NB: N=105 programmes. The category 'other' means that the delivery of digital / multilingual competence depends on the vocational school, material resources and teachers'/trainers' approach/teaching methods.
Source: Cedefop.

([57]) Qualification type refers to a group or cluster of qualifications within a country that share specific characteristics, for example by the subsystem they belong to, legal regulations and regulatory body, purpose, general educational objectives as well as duration of related programmes, access requirements or level of labour market entry. Within a qualification type, there can be many different qualifications regarding the content: the specific learning outcomes they include can be quite different because they are linked to different fields (such as technical, social and health care, business) (Cedefop, 2014b). Usually, the qualification type is linked to certain levels of the national and European qualification frameworks.

Analysis also shows that digital and multilingual competences are mainly perceived as 'pure' key competences compared to being occupation-specific competences (Figure 51).

Figure 51.   **Multilingual and digital competence: 'pure' or 'occupation-specific'**
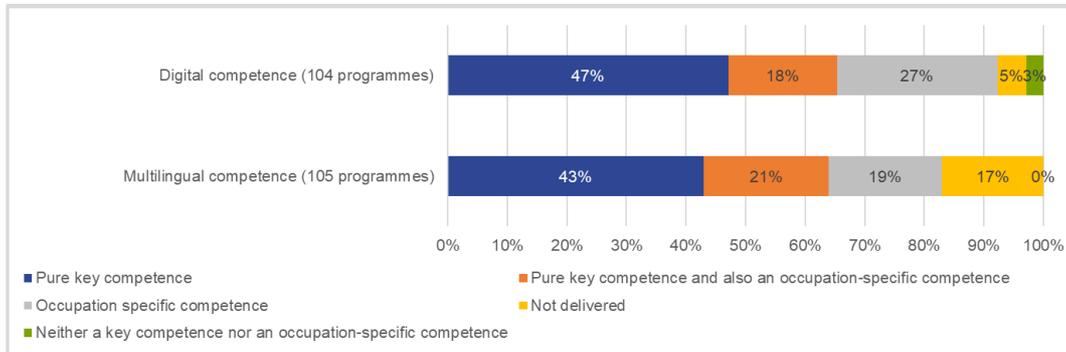
NB: N=105 for multilingual competence; 104 for digital competence.
Source: Cedefop.

Data show that there are no significant differences in how digital and multilingual competences are perceived at individual programme level. However, there are important differences by sector. Multilingual competence is most often seen as an occupation-specific competence in the accommodation and food service sector (32% of all programmes in this sector) compared to digital competence which is considered as an occupation-specific competence predominantly in the manufacturing sector (41% of all programmes in the sector).

7.4.   Effectiveness of EU/national policies in promoting key competences

Key messages:
- Contextual factors outside the scope of the study and variety of objectives addressing key competences make uniform assessment of their effectiveness and efficiency difficult.
- In the reference period (2011-18), two-thirds of policies completed their planned activities. Most of these activities reached their immediate objectives.
- Policies promoting key competences (without aiming to embed them) generally lead to follow-up policy actions.
- Policies embedding key competences into IVET are found to contribute to observable changes in programme delivery, reference documents, teacher/trainer competences and assessment standards.

This report showed the limitations of conducting an efficiency assessment for policies promoting key competences. Without information about the 'inputs' (the financial costs associated with a policy) it is not possible to determine the efficiency of policy actions. Policies in this study are often (reported to be) budget neutral; policies that are not, do not present comparable data on financial investments. For these reasons, this study focuses on the outputs of policies, and the effects these have on the embedding of key competences. The study defined effectiveness as the extent to which a policy attains its objectives.

Complex and interrelated objectives of the study made assessing policy effectiveness even more challenging. Evaluating policy effectiveness had to be based on mapping:

(a) how the selected key competences were included in IVET;

(b) policies promoting these key competences;

(c) how the identified policies had influenced IVET in Europe.

The challenges in relation to the three aspects are discussed below.

(a) Policies: policies that promote the selected key competences differ on many accounts. There are few cases where policy is solely directed at promoting a specific key competence in IVET. More common is that policies have a wider scope with regard to their objectives, the educational sector they cover and the key competences they address.

(b) Key competence inclusion in IVET: studying key competences inclusion in IVET is challenging as IVET is a very heterogeneous sector. Attention to specific key competences can widely differ per sector, EQF level, and even per individual IVET programme. The responsibilities for delivery of IVET programmes differ, as well as the specific learning venues (school-based and work-based). Arriving at overarching conclusions at national level is challenging, let alone drawing conclusions for the EU+.

(c) Influence of policies on key competence inclusion in IVET: given the diversity of the policies and their objectives, and the heterogeneity of IVET, determining the precise influence of policies on how specific key competences are included is challenging.

The applied analytical framework enabled mapping and analysis of the policies; how key competences are included and how policies influence the inclusion. However, conclusions on impact and effectiveness of policies, especially concerning the effectiveness of EU level initiatives (Bruges communiqué and Riga conclusions) remain difficult to reach. While key competences are generally well included in IVET systems and almost all countries have adopted policies on them in the timeframe of 2011-18, the study found that national policies only occasionally refer directly to the Bruges communiqué (2011) and the Riga conclusions (2015).

Nevertheless, policies tend to be in line with them. The main added value of EU and international initiatives for promoting key competences consists of its longer-term direction. It helps to set the scene for national policies, puts these in a wider context, and can contribute to momentum for working on key competence in IVET.

When assessing the effectiveness of policies targeting key competences in the countries, this study first assessed to what extent they had implemented the specific activities that they propose. No significant differences were observed between policies that promote different key competences; two-thirds of policies adopted between 2011 and 2015 have been implemented (largely) as planned. As can be expected for more recent policies, a larger share is still in the implementation phase (Figure 52).

Figure 52.   **Implementation of policy activities targeting three key competences in 2011-15 and 2015-18**
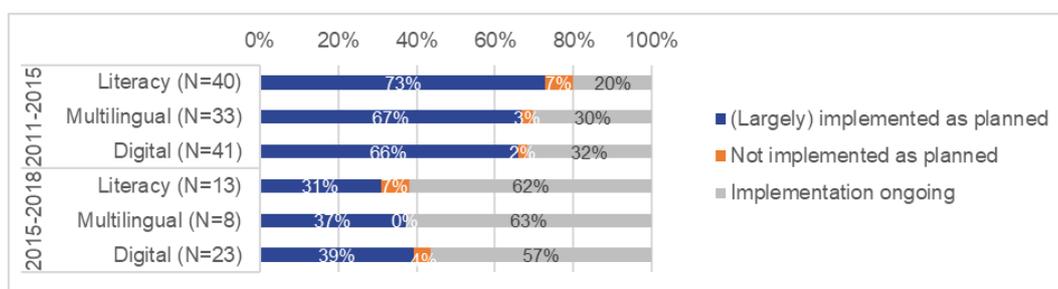
NB: N=79.
Source: Cedefop.

A second step in assessing the effectiveness of the policies is to compare the results of these activities against what the policies aimed to achieve. This is not always straightforward, as the objectives of policies on key competences are not always clearly defined or are formulated in such a general manner that they do not allow meaningful targets to be set. Broad objectives are common and tend to go without an accompanying baseline or target value. Even where baselines and numerical targets are defined, there is an inherent problem of attribution; it is difficult to isolate efforts on specific key competences from broader developments in the world of VET, and the broader national education system. This is particularly true for policies that focus on promoting key competences, without aiming for changing the way they are included in IVET. Success was measured by the ability to inspire follow-up action. This study observed that this was the case for most policies of this type, mostly in the form of more specific strategic policy actions at lower levels of governance, and to a similar extent across the three key competences studied.

The policies that are the object of study did not start from scratch. Before the 2006 recommendation and the publication of other EU agenda-setting documents (Bruges and Riga), key competences already received attention at national level. Therefore, the measure of success of policies cannot only be based on the extent to which key competences are now put on the agenda. This study reviewed the extent to which policies aimed at and contributed to observable changes in IVET programme delivery, reference documents, teacher/trainer competences and assessment standards. It considers that these policies are often one among many interventions in the continuously changing IVET environment. Whether or not these are related to the policies studied cannot be said with certainty, but the study showed that changes took place in the way that key competences are now embedded in reference documents, programme delivery, assessment standards and teacher training. The outcomes show differences across these elements, with more incremental success in embedding key competences in reference documents and assessment standards, while more immediate results were reached in programme delivery and teacher training. The broader variety of stakeholders involved in setting and testing education and occupational standards (outside the education sector, such as social partners or professional organisations) played a role in this. This does not make policies in these areas less effective, nor less important. It merely underlines the importance of approaching the embedding of key competences in IVET in an integrated way, combining their promotion with specific policy plans with measurable targets and matching actions that address both teacher training and programme delivery (in the short term), as well as aim at reconsidering reference documents and assessment standards.

Acronyms/Abbreviations

CAD	computer aided design
CEFR	Common European reference framework for languages
CPD	continuing professional development
CLIL	Content and language integrated learning
CVET	continuing vocational education and training
DigComp	European digital competence framework
DigCompOrg	European framework for digitally competent educational organisations
EACEA	Education, Audiovisual and Culture Executive Agency
ELGPN	European lifelong guidance policy network
EQF	European qualifications framework
ET 2020	Strategic framework for education and training 2020
EU	European Union
EU+	European Union, Iceland, Norway and the United Kingdom
FET	further education and training
ICT	information and communications technology
ISCED	international standard classification of education
IVET	initial vocational education and training
NACE	*Nomenclature statistique des activités économiques dans la communauté européenne*
NQF	national qualifications framework
OECD	Organisation for Economic Cooperation and Development
PISA	Programme for international student assessment
SOLAS	Further Education and Training Authority (Ireland)
VET	vocational education and training

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Annex 1. Glossary of main terms

The following main terms have been defined for the purpose of this study.

Assessment of learning outcomes is the process of appraising an individual's knowledge, know-how, skills and/or competences against predefined criteria (learning expectations, measurement of learning outcomes).

Curriculum is defined as an inventory of activities related to the design, organisation, and planning of an education or training action, including definition of learning objectives, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers (Cedefop, 2014c).

Digital competence 'involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), and problem solving' (European Commission, 2018a).

Education standards may define the expected outcomes of the learning process leading to the award of a qualification, the study programme by content, learning objectives and timetable, entry requirements and the resources necessary to attain the learning objectives, as well as teaching methods and learning settings, such as in-company or school-based learning. Education standards answer the question of what does the student need to learn to be effective in employment and society? (Cedefop, 2009).

Embedding key competences is defined in this study as the activity undertaken by public policies to increase the extent to which key competences are included in IVET, either through changes in reference documents, such as education and occupational standards, programme delivery, assessment standards, and teacher/trainer competences. In contract, 'inclusion of key competences in IVET' refers to the static picture of the way that key competences are dealt with in IVET.

Implementing act(s) setting concrete actions, budget, targets, and guiding the implementation of IVET policy). Changes to main legislative acts and new legislative acts can be accompanied by implementing acts that set out more concretely what needs to be done. In some case, no changes are made to the

main legislative act but to the IVET system, as in better embedding of key competences being regulated through the implementing acts.

Inclusion of key competences in IVET. A static picture of the way that key competences are dealt with in IVET. Key competences may be included in IVET through definitions in reference documents, such as educational and occupational standards, including the descriptions of learning outcomes and/or educational objectives, delivery in programmes/curricula; assessment/examination, or teacher training. In contrast, 'embedding' is defined as the *activity* undertaken by public policies to reach a different level of inclusion.

Initial vocational education and training (IVET) is 'carried out in the initial education system, usually before entering working life'. Within this definition, VET is education and training which aims to equip people with knowledge, know-how, skills and/or competences required occupations or more broadly on the labour market (Cedefop, 2014c).

Key competences. Competences are defined as a combination of knowledge, skills and attitudes appropriate to the context. Key competences are those which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment. (European Commission, 2018a).

Legislative act(s) setting the governance systems, responsibilities and defining IVET, usually without an end-date: key competences can be mentioned in the main legal frameworks governing IVET.

Literacy involves the knowledge of reading and writing and a sound understanding of written information, and thus requires an individual to have knowledge of vocabulary, functional grammar and the functions of language. It includes an awareness of the main types of verbal interaction, a range of literary and non-literary texts, and the main features of different styles and registers of language (European Commission, 2018a). Literacy also refers to using different sorts of texts and different technologies for gathering and processing information and encompasses the ability to critically assess and work with information (European Commission, 2018a).

Multilingual competence defines the ability to use different languages appropriately and effectively for communication (European Commission, 2018a). As well as reading and writing, *multilingual competence* encompasses oral forms

of communication, speaking and listening in different languages (Moore, 2014). However, literacy and multilingual competences share several skills dimensions: the 'ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of societal and cultural contexts according to one's wants or needs. As appropriate, it can include maintaining and further developing mother tongue competences' (European Commission, 2018a).

Occupational standard describes the activities and tasks for a specific job as well as the competences typical to an occupation; occupational standards answer the question 'What does the student need to be able to do in employment?' (Cedefop, 2009).

Programme leading to a qualification can be defined as an inventory of activities, content and/or methods implemented to achieve education or training objectives (acquiring knowledge, skills and/or competences), organised in a logical sequence over a specified period of time (Cedefop, 2014c).

Programme delivery: This concerns how a qualification and the related learning outcomes/educational objectives are translated into an educational process. It relates to how a VET programme is delivered to the student. The delivery can entail a number of characteristics such as learning outcomes structure (work-activity units, educational units, or learning domains), relation between key competences and other learning outcomes (stand-alone unit or integrated), provider (public providers, companies or both), learning venue (school, work place, or both), and weight in terms of time and modules (a foundational module, an add-on, or an elective module).

Promoting key competences in IVET is defined as the act of mentioning and raising awareness about key competences. This is a broad category including all policies selected in the scope of this study. The main distinction made among policies promoting key competences is whether they have an objective to embed them into IVET.

'Pure' versus occupation-specific key competence. Key competences may be analysed from the perspective of their applicability: occupational (for example, in ICT programmes digital competence is included as a requirement for an occupation); or *stricto sensu*, not directly linked to an occupation. In this study we label the latter as 'pure' key competences. In practice the two often overlap.

Qualification is the formal outcome (certificate, diploma or title) of an assessment procedure which 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 (Cedefop, 2014c).

Qualification type refers to a group or cluster of qualifications within a country that share specific characteristics, for example by the subsystem they belong to, legal regulations and regulatory body, purpose, general educational objectives as well as duration of related programmes, access requirements or level of labour market entry. Within a qualification type, there can be many different qualifications with regard to the content: the specific learning outcomes they include can be quite different because they are linked to different fields (technical, social and health care, business) (Cedefop, 2014b). Usually, the qualification type is linked to certain levels of the national and European qualification frameworks.

The qualifications, assessments, programmes and curricula are informed by a reference document in which the intended learning outcomes of the qualification are described. As discussed in a forthcoming Cedefop study on the role of learning outcomes, countries use different reference documents and instruments to define and describe the intended learning outcomes. A reference document can be an occupational or educational standard, a law, a qualification standard and/or framework curricula specifying the learning outcomes and general structure of qualifications, assessments, programmes and curricula.

Strategies set visions, goals, and directions for IVET development for the long term. Key competences can be stated in these strategies. While not necessarily linked to a legislative act, this could involve stimulating VET providers to work on embedding key competences in IVET provision.

Annex 2. Overview of the analytical framework

Key competences:
Digital, Multilingual, Literacy

RQ1. How have policies promoted key competences in initial VET since 2011?
a. What are the 2020 national policy objectives in relation to key competences?
b. Which national policies related (but not limited) to curricula, occupational and educational standards, qualifications, programmes, learning outcomes and teachers and trainers have been implemented since 2011?
c. How have broader EU objectives translated into these national policies (if at all)?

Policies:
A. General information on the VET reforms in 2011-2018
Important reforms in VET: e.g. introduction NQFs
Overview of responsibilities related to the dimensions (learning outcomes, programmes, assessment and teacher competences): national, regional, local, school levels

B. Specific policies in 2011-2018 related to key competences
The 2020 national policy objectives in relation to key competences
Per policy
○ Type of policy ○ Date of adoption ○ Governance level ○ Overall objective of the policy and specific objective related to key competences in IVET ○ Key competences scope ○ Education and training sector scope ○ Dimension of the VET sector targeted ○ Target group for the policy ○ Information about the implementation of the policy ○ Main stakeholders ○ Links to EU initiatives / translation of broader EU objectives ○ Availability of evaluations or studies on the policy

Link between KC, policy and inclusion

IVET
EQF level 3, 4 and 5

RQ2. How the selected key competences are embedded in initial VET?
a. How have national policies translated into occupational and educational standards, curricula and programmes, assessment standards (if at all)?
b. How are the selected key competences being assessed (if at all)?
c. How is learning organised to promote key competences?
d. How do the selected key competences support the development of other competences (key and vocational) and personalised and collaborative learning?

1: Key competences in reference documents (education and occupational standards)
On the following aspects summative assessments are provided that relate to all qualifications as included in a specific qualification type. This assessment is conducted per selected key competence (for all qualification types):
• Usual links to key competences and European tools (e.g. CEFR, DigComp) in guiding materials for developing and renewing learning outcomes descriptions.
• Links between the key competence integration and policies.

Per key competence the following aspects are assessed (for individual qualifications selected in the study):
• The extent to which reference is made to the key competence
• Position of the key competence among the learning outcomes (stand-alone subject/module; integrated with other learning outcomes)
• Examples of explicit formulations of the key competence
• Assessment of key competence integration in the individual qualification

2: Key competences in programme delivery
On the following aspects summative assessments are provided that relate to all programmes leading to a qualification as included in a specific qualification type. This assessment will be conducted per selected key competence (for all qualification types):
• General approach to situating key competence in the programmes, being delivered as a stand-alone subject/module, or integrated in other modules/subjects in the programmes leading to a qualification
• General approach in the mode of delivery of the key competence (school-based, including work-based learning in school workshops/laboratories; work-based (in-company training))
• General approach to links to European tools
• Links between the key competence embeddedness and policies.

Per selected key competence the following aspects are assessed (for individual qualifications selected in the study):
• Weight of the key competence within the programme (hours, credits devoted to the key competence)
• Position of the key competence in the programme (foundation for other learning outcomes, non-foundational).
• Assessment of key competence integration
• Links between the key competence integration and policies

3: Key competences in assessment standards
On the following aspects summative assessments are provided that relate to assessment procedures for all programmes leading to a qualification as included in a specific qualification type. This assessment will be conducted per selected key competence (for all qualification types):
• Usual approach to assessing the key competence: as a stand-alone module/ subject, or assessed in an integrated manner (or not at all)
• Use of EU tools (like DigComp, CEFR)
• Links between the key competence integration and policies.

Per key competence the following aspects are assessed (for individual qualifications selected in the study):
• Applied assessment methods for the key competence
• Links between the key competence integration and policies

4: Key competences in teacher/trainer training
Per key competence the following aspects are assessed in relation to whether teachers and trainers possess the skills and competences to teach and assess key competences (for individual qualifications selected in the study):
• When key competence is integrated in the programmes leading to the qualification, the teachers and trainers have the competence to teach them.
• When key competence is integrated in the assessment procedures, the teachers and trainers have the competence to assess them.
• Which teachers and trainers have the competences (all, only those specialised in teaching / assessing the key competence)?
• When teachers and trainers have the skills and competences, it is assessed through which pathway these skills and competences are acquired (initial teacher/trainer education; induction, CPD)
• Assessment of key competence integration
• Links between the key competence integration and policies

RQ3. To what extent has promoting key competences in VET been effective and efficient at national/EU level?
a. What are the links between national policy objectives (defined in 2011-15) in relation to key competences and their actual implementation until 2018? Was everything that had been planned implemented? If not, what are the reasons?
b. How do existing policies (national and EU) and practices add value to promoting key competences in VET (if at all)?
c. How do the selected key competences support lifelong learning, employability and mobility?
d. Which national policies or practices have failed and why?

Key competences in initial vocational education and training: digital, multilingual and literacy

Key competences are important for personal development, employment, integration into society and lifelong learning. They are transversal and form the basis for all other competences. Acquiring key competences is possible through various learning pathways, including vocational education and training (VET). However, little is known at the European level of how VET supports the key competence development.

This research paper investigates three key competences: digital, multilingual and literacy. It analyses the extent to which they are included in initial upper secondary VET in the EU-27, Iceland, Norway and the UK, as well as national policies supporting their development since 2011. It focuses on four areas of intervention: standards, programme delivery, assessment and teacher/trainer competences.

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