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EN

Defining, writing and applying learning outcomes

A EUROPEAN HANDBOOK – SECOND EDITION

CEDEFOP

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A European handbook – second edition

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Foreword

The learning outcomes principle, emphasising what a learner is expected to know, be able to do and understand at the end of a learning process, plays an increasingly important role in efforts to improve the quality and relevance of education and training in Europe.

The focus on learning outcomes supports the dialogue between education and training and labour market actors, as well as across different education and training subsystems. Similarly, the increased transparency offered by learning outcomes acts as a reference point for several stakeholders – policy-makers, labour market actors and teachers – making it easier to analyse the match between skills demands and education and training provision.

However, learning outcomes are written and applied in different ways which do not guarantee benefit to end-users, such as learners, teachers or employers. While promoting the overall use of learning outcomes, the revised edition of this handbook seeks to identify not only the opportunities but also the challenges involved when writing and defining them. Building on the first edition published in 2017, the handbook provides a link to an extensive collection of international and national resources, allowing stakeholders to consult experiences gained throughout (and beyond) Europe.

The revised European handbook was written for individuals and institutions actively involved in defining and writing learning outcomes in education and training in general, and in vocational training in particular. It helps to promote the learning outcomes approach in ways which directly improve the quality and relevance of learning processes across Europe. The revised European handbook will serve as a reference point for continuous cooperation and exchange that could take forward both learning outcomes and their key role in the dialogue between education and training and the world of work.

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Executive summary

This updated and extended version of Cedefop's 2017 European Handbook on defining, writing and applying learning outcomes addresses four main aims.

First, and based on an elaboration of how different users apply learning outcomes for a wide range of purposes, it demonstrates that careful contextualisation and adaptation is a precondition for successful application of the approach. This contextualisation, however, must be combined with attention to alignment, ensuring that applications in different contexts developed for different purposes speak to and strengthen each other.

Second, the handbook reflects on key conceptual and terminological issues influencing the use of learning outcomes. This not only helps to clarify the conditions under which the full potential of the approach can be realised but also points to its inherent limitations.

Third, the lessons from the two first parts are summarised in a set of 'rules of thumb', offering practical advice to practitioners responsible for defining, writing and applying learning outcomes.

Fourth, the handbook provides an overview of, and a direct link to, existing guidance and research material in this area. This online resource makes it possible for readers to explore issues of relevance in more depth.

A key message of the handbook is that there is no single 'right' or 'wrong' way to define, write or apply learning outcomes. Instead, there's a need to share experiences on what is and is not working. It is our hope that the handbook, notably through an improved link to available guidance and research material, can serve as a focal point for future exchanges and dialogue.

CHAPTER 1

Introduction

The learning outcomes principle, emphasising and clarifying what a learner is expected to know, be able to do and understand at the end of a learning process, now underpins most European education and training systems (Cedefop, 2016; 2021). Qualifications and programmes at all levels and in almost all parts of education and training are described using learning outcomes. They also play a key role in the dialogue between education and training institutions and labour market stakeholders, helping to articulate skills and competence needs, thus directly and indirectly supporting the review and renewal of qualifications and programmes (Cedefop, 2021). Overall, we observe broad political agreement among European policy-makers and stakeholders on the need for, and usefulness of, learning outcomes.

This political commitment, however, does not guarantee that learning outcomes are written and applied in ways which benefit end-users such as learners, teachers or employers. Researchers (Allais, 2017; Winch, 2021) have warned against the possible limitations and even negative impact of learning outcomes. Unreflected use of learning outcomes can, it is argued, result in an unintended simplification – dumbing down – of complex and multidimensional learning processes. It is therefore important not only to identify the added value of learning outcomes but also to point to limitations and possible negative implications.

This revised handbook is written for those actively involved in defining and writing learning outcomes. Our purpose, similar to the first edition published in 2017, is to build on and add to the extensive guidance and research material that already exists.

A message of this handbook is that the writing and articulation of learning outcomes must be followed by implementation in practice, through teaching, learning and assessment. As Biggs and Tang (2007) underline, alignment between statements of learning outcomes, the teaching/learning activity and the assessment processes, is critically important. This interaction decides whether learning outcomes add value to the learning process or not and influences our ability to move from statements of intended learning outcomes to (actual) achieved outcomes.

1.1. The handbook context

Cedefop studies (Cedefop, 2009; 2016; 2021) document that the learning outcomes approach is firmly embedded in European education and training policies and practices. While explicitly introduced in European policy documents in the early 2000s, national learning-outcomes-based initiatives came earlier, exemplified by reforms (to mention a few) in Finland, Norway and the UK in the 1980s and 1990s. Most European countries now use learning outcomes to signal what they expect a student or pupil to know and be able to do at the end of a programme or learning sequence. The development of qualifications frameworks and the redefinition of curricula and programme documents from input to outcomes point to the role played by learning outcomes in reforming and modernising education and training. Major progress has been made in these areas over the past two decades ([1]).

Resembling a Swiss army knife, suitable for a variety of purposes, learning outcomes influence initiatives at different levels and in a wide range of areas. They are commonly used to define the levels of qualifications frameworks, orient curricula, set qualification standards, describe programmes and define assessment specifications. They also influence teaching methods, learning environments and assessment practices. At European level, both in the Bologna and Copenhagen Processes, learning outcomes are described as the 'glue' binding diverse policy initiatives and instruments together and are seen as a precondition for transparent and permeable education and training systems, such as supporting links between vocational and academic programmes. This growing influence of learning outcomes in most European countries, and in (almost) all education and training sectors, reflects strong political consensus on the perceived usefulness of this approach.

Far from progressing in a vacuum, European developments are influenced by broader international ones, exemplified by the 'outcome-based education' movement in the US from the 1960s and onwards. Lines can also be drawn back to various education reform movements promoting outcome-based ap-

([1]) The extent to which learning outcomes now underpin national systems is exemplified by the report (2021) of the EQF subgroup on Horizontal Comparison, where six Member States carried out a detailed analysis of the learning outcomes descriptions of ICT and Healthcare qualifications at levels 4, 5 and 6 of the EQF. This analysis demonstrates that learning outcomes are used systematically in all countries, although demonstrating differences in style and length. A similar lesson can be drawn from the EQF and Europass subgroup (2021-22) on synthetic descriptions of qualifications (for databases and qualifications supplements) where 12 Member States build on their national learning outcomes approaches to create a common European approach for short (and transparent) descriptions.

proaches under headings such as ‘scientific curricula’, ‘instructional objectives’, ‘criterion-based assessment’ and ‘learner-centred education’.

1.2. The structure of the handbook

The first part of the handbook discusses the main reasons behind the shift to learning outcomes (Chapter 2) and how different users seek to realise these through a variety of instruments (Chapter 3). A key message is that learning outcomes statements used for qualifications frameworks, curricula, qualification standards and assessment criteria are potentially interlinked but vary in specificity and generality. Given their critical signalling role, a detailed discussion of the use of learning outcomes in national vocational education and training curricula is presented in Chapter 4.

The second part of the handbook discusses in some depth the conceptual issues confronted when working with learning outcomes. Starting from a discussion of the learning outcomes concept and how this relates to terms such as learning objectives and competence(s) (Chapter 5), the handbook examines the conceptual and terminological challenges involved in capturing the depth and breadth of learning. Attention is paid to the challenges faced when addressing transversal skills and competences (Chapter 6). This part of the handbook concludes with a discussion of the perceived negative implications of using learning outcomes (Chapter 7).

The third part (Chapters 8 and 9) sets out several basic steps – rules of thumb – to be considered when defining and writing learning outcomes. These ‘rules of thumb’ are supported by concrete examples illustrating how the abstract principles can be put into practice.

The fourth part of the handbook contains links to an extensive overview of existing guidance and research material and provides an important resource for policy-makers and practitioners working in this area.

PART I.
Learning outcomes: users and instruments

This first part of the handbook outlines the main uses and users of learning outcomes and the instruments used to pursue them. Supported by examples, this part demonstrates how learning outcomes must be defined, written and applied differently for different purposes, and that no single ‘fit for all’ approach exists.

CHAPTER 2

Main users of learning outcomes

Learning outcomes are used for a wide range of purposes and by a wide variety of users. Consequently, and directly reflecting different needs, they must be defined and described – in format, length and detail – in ways which suits these users and their needs. The level descriptors in a qualifications framework will not operate at the same level of detail and specificity as the learning outcomes statements of curricula and assessment specifications. While qualifications frameworks provide a general reference for comparing qualifications and distinguishing levels, learning-outcomes-based curricula and assessment specifications must be defined and written in a way that 'speaks to' learners and teachers, and adds value to the learning process. The following sections identify main learning outcomes users and their needs.

2.1. The learner

Learning outcomes statements clarify what a learner is expected to know and be able to do and understand, having completed a learning sequence, a module, a programme or a qualification. They can support the initial choice of education and training; they can help to orient the learning process itself; and they can clarify what to expect during assessment or validation. However, for learning outcomes statements to make any difference to learners, they must become visible and be used as a reference point at all stages of the education and learning process, from the initial choice of programme to the final assessment. In some cases, the shift to learning outcomes is seen as a purely administrative requirement, isolated from the learning process itself. When this happens, perhaps reflecting lack of support from stakeholders and institutions involved, outcomes will play a limited role and add little value for the learner. The added value of learning outcomes for the individual learner thus depends on the extent to which this principle is broadly understood and accepted in the institutions responsible for its implementation.

2.2. The teacher and instructor

For the teacher and/or instructor, the learning outcomes approach helps to orient teaching, to select methods and to support the individual learner throughout the learning process. Learning outcomes statements, by indicating the scope of knowledge and skills to be addressed and the level of performance to be achieved, are crucial for planning and organising teaching and learning. From a teacher's point of view, the design of learning outcomes can pursue two very different objectives: statements can be defined and described in a high level of detail, giving as clear as possible orientation to the teacher. Statements can alternatively be kept at a more general level, leaving room for individual and contextual adaptation. We can find examples of learning outcomes statements being criticised from both perspectives; as being too vague or ambiguous or being too explicit and controlling. While it is up to stakeholders to decide on this balancing, those involved need to be aware of the inherent tension.

2.3. The assessor

For the assessor, the learning outcomes should clarify the criteria ([2]) for success/failure and performance ([3]). They should also clarify the area of learning being assessed, indicating what is relevant and not. While most frequently linked to summative assessments, learning outcomes can help with formative assessment throughout the learning process. The role of learning outcomes for assessment is well illustrated by the gradual introduction of validation of non-formal and informal (prior) learning in European countries. The shift to learning outcomes has been essential for these developments, making it possible to assess (make visible and value) learning outside classrooms, at work and in leisure time. Introducing learning outcomes-based qualification standards allows the assessor to use the same reference points for different purposes and end-users: to assess classroom learning but also non-formal and informal learning.

([2]) The term 'criterion referencing' is commonly used to describe this form of assessment. This contrasts norm-referencing where performance is measured with reference to a reference group, for example a class of students.

([3]) When used for summative purposes, the design of the standard or reference point needs also to clarify whether a grading of performance is to be applied or whether a simpler compliance/non-compliance is to be used (see also Chapter 9). The use of grading will require even further detailed definitions of domains and criteria.

2.4. The education and training provider

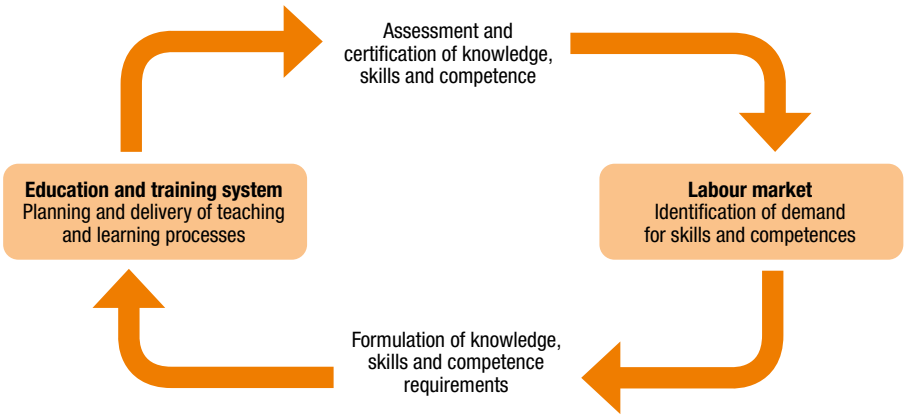
For the education and training institution, learning outcomes provide an important instrument for developing as well as reviewing programmes and qualifications. The approach also provides the basis for systematic dialogue with labour market and society stakeholders regarding evolving skills needs. The perspective helps to determine the purpose and orientation of a course, a programme or qualification and to clarify how it relates to and/or overlaps with other courses/programmes and qualifications. Learning outcomes provide an important reference point for quality assurance and close dialogue with end-users. The relationship between intended and actual learning outcomes is very important and needs to be addressed systematically, ranging from regular assessments to skills intelligence approaches of different kinds, such as learner and employer surveys, as illustrated by Cedefop (2021).

2.5. For labour market and society

For society and the labour market, learning outcomes provide a common language allowing different stakeholders in education and training, as well as the labour market and society at large, to clarify skills needs and to respond to these in a relevant way. This can allow for systematic review of the quality and relevance of education and training, focusing on the relationship between intended and achieved learning outcomes. The definition of learning outcomes requires systematic reflection on the use of labour market intelligence and how this will be balanced with the ability of the education and training system, and of teachers, to support education, training and learning. The initial definition, and the continuous review and renewal of education and training, depend on a 'feedback loop' where the intentions expressed by the education and training system are constantly challenged by experiences from the labour market and society. The feedback loop based on learning outcomes serves as an important reference point in the dialogue between the world of education and the world of work, allowing the identification of skill needs and reflection on the learning outcomes acquired with a specific qualification as they are realised in the workplace (Cedefop, 2021).

This feedback loop, exemplifying the interaction between education and training and the labour market ([4]), is illustrated by Figure 1.

Figure 1. **The feedback loop education-training and labour market**



Source: Cedefop (2013; 2021).

In recent years, learning outcomes have increasingly become a way to increase overall qualifications transparency and reduce barriers to transfer and progression across institutional and national borders. The introduction of learning outcomes is also seen as a way to increase accountability, offering a better basis for judging whether education and training institutions deliver according to needs and expectations.

All this illustrates that learning outcomes are not a politically neutral instrument but can be used for different purposes ([5]). While the arguments in favour of the learning outcomes approach are strong, they should never operate in isolation or be understood as neutral or objective. Learning outcomes statements are, in many respects, carriers of values; their intentions express different perspectives on what should be achieved and not achieved. This normative aspect needs to be acknowledged by everybody involved in the definition, description and application of learning outcomes.

([4]) Learning-outcomes-based qualifications will normally not be exclusively based on information from the labour market. Important, information will usually have to be combined with input from other stakeholders, for example on broader objectives linked to citizenship, democracy, etc. For a detailed analysis of the feedback loop, see Cedefop (2021).

([5]) See Chapter 6 for a discussion on possible limitations of the approach.

CHAPTER 3

Instruments used to pursue learning outcomes

Learning outcomes are used by a variety of users with different needs and a diversity of purposes. This chapter discusses the instruments where learning outcomes play a key role, allowing us to identify the challenges involved for each separate instrument and also to draw attention to the relationship between instruments and how they may depend on each other.

3.1. Qualifications frameworks

Qualifications frameworks play an increasingly important role at international, national and sector levels. Learning-outcomes-based frameworks seek to increase transparency and allow for comparison of qualifications across institutional and national borders. The learning outcomes descriptors in qualifications frameworks are normally designed using a horizontal axis identifying learning domains (such as knowledge, skills and competence ([6]) and a vertical dimension indicating how the complexity of learning increases from level to another. While a few national qualifications frameworks were introduced during the 1980s and 1990s, the adoption of the European qualifications framework in 2008 (and its revision in 2017) triggered a Europe-wide development leading to the introduction of frameworks in all countries. The basic structure of the EQF descriptors, illustrating the above principles, ([7]) is shown in Table 1.

([6]) The descriptors defining the levels of the EQF were developed between 2003 and 2008.

([7]) The learning outcomes descriptors of the European qualifications framework changed with the 2017 revision of the EQF Recommendation. The headline of the third descriptor was changed from 'competence' to 'autonomy and responsibility'.

Table 1. **EQF level descriptors: main elements**

Knowledge	Skills	Responsibility and autonomy
In the context of EQF, knowledge is described as: • theoretical and/or • factual	In the context of EQF, skills are described as: • cognitive (involving the use of logical, intuitive and creative thinking) • practical (involving manual dexterity and the use of methods, materials, tools and instruments)	In the context of the EQF, responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility.

Source: Council of the European Union (2017).

The descriptors of a regional framework like the EQF, needing to be relevant to more than 40 countries, are written at a high level of generality. This allows them to be relevant to the wide diversity of qualifications and qualifications types being awarded by these countries. A national qualifications framework can operate with less generic and more specialised descriptors. The same is the case for frameworks addressing a sector or a part of national qualifications system, for example vocational education and training or higher education. The descriptors also have to reflect whether a framework has a prescriptive or a more limited guiding (transparency) function (European Commission, 2011, pp. 38-39). Table 2 shows the level descriptors as used by the Polish qualifications framework, illustrating how the horizontal and vertical dimensions have been addressed at national level.

Table 2. **Learning outcomes level descriptors (exemplified by levels 4 and 5) used in the Polish qualifications framework**

Level 4	Level 5
KNOWLEDGE **In the areas of learning, creativity and professional activities, a person has knowledge and understanding of:**	
• a broadened set of basic facts, moderately complex concepts and theories, as well as the dependencies between selected natural and social phenomena and the products of human thought • a broader scope of selected facts, moderately complex concepts, theories in specific areas and the dependencies between them • the basic conditions of conducted activities	• a broad scope of facts, theories, methods and the dependencies between them • the diverse conditions of conducted activities
SKILLS **In the areas of learning, creativity and professional activities a person is able to:**	
• complete moderately complicated tasks, partially without instruction, often under variable conditions • solve moderately complex and somewhat non-routine problems often under variable conditions • learn autonomously in a structured form • understand complex statements, formulate moderately complex statements on a broad range of issues • understand and formulate simple statements in a foreign language	• complete tasks without instruction under variable, predictable conditions • solve moderately complex and non-routine problems under variable, predictable conditions • learn autonomously • understand moderately complex statements, formulate moderately complex statements using specialised terminology • understand and formulate very simple statements in a foreign language using specialised terminology
SOCIAL COMPETENCE	
• assume responsibility for participating in various communities and functioning in various social roles • act and cooperate with others autonomously under structured conditions • evaluate one's own actions and those of persons one is directing • take responsibility for the results of one's own actions as well as those of the persons one directs	• assume basic professional and social responsibilities, evaluate and interpret them • independently act and cooperate with others under structured conditions, direct a small team under structured conditions • evaluate one's own actions and those of others and the teams one directs; assume responsibility for the results of those actions

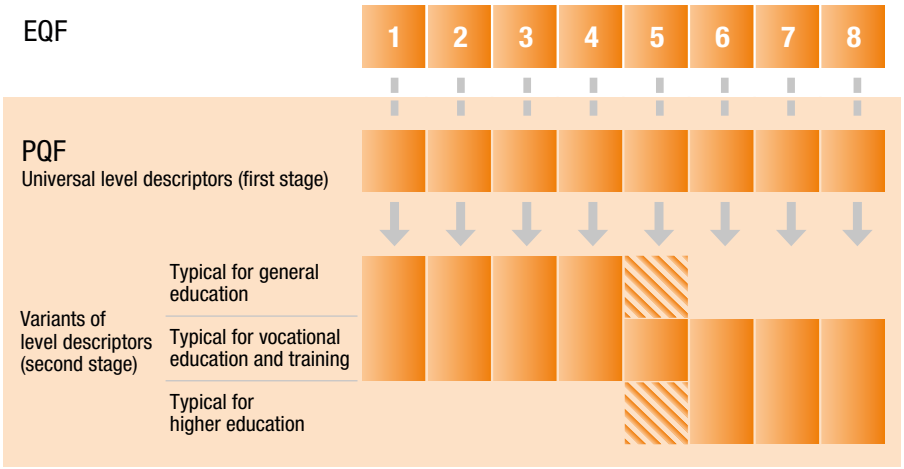
NB: The Polish qualifications framework (PQF) forms an integrated part of the Polish qualification system formally adopted by the Polish Parliament on the 22 December 2015 and came into force in January 2016.

Source: Sławiński, (2013, p. 38).

The Polish qualifications framework offers yet another solution: introducing three main sets of level descriptors designed for different purposes and operating with different levels of detail:

(a) Polish universal descriptors, underpinning the Polish comprehensive national qualifications framework;
(b) Polish descriptors for education and training subsystems and sub-frameworks, notably for general education, vocational education and training and (academic) higher education;
(c) descriptors for economic sectors or subject areas.

Figure 2. **The structure of level descriptors in the PQF**



Source: Instytun Badab Edukacyjnych (Educational Research Institute, IBE.). The Polish qualifications framework.

The universal descriptors (defined as knowledge, skills and social competence) have been agreed between stakeholders in general education, VET and higher education and represent a common reference point for developments at the other two levels, in subsystems and at sector/subject level. The basic distinction between knowledge, skills and social competence is used at all levels but differs in terms of specificity (Cedefop, 2018).

Yet another approach is exemplified by the German qualifications framework, drawing the distinction between professional and personal competence. In this case, 'competence' is considered an overarching concept, significantly influencing the way learning outcomes are defined and described in the level descriptors (Table 3). By differentiating between professional and personal

competence, and showing how knowledge (of varying depth and breadth), skills (instrumental and systematic, linked to judgement), social competence (communication, teamwork, leadership and involvement) and autonomy (autonomous responsibility, learning and reflectiveness) the emphasis is on the overall competence of the individual and the holistic character of the term.

Table 3. **Level descriptors in the German qualifications framework for lifelong learning**

Professional competence		Personal competence	
Knowledge	**Skills**	**Social competence**	**Autonomy**
Depth and breadth	Instrumental and systemic skills, judgment	Team/leadership skills, involvement and communication	Autonomous responsibility/ responsibility, reflectiveness and learning competence

Source: The German qualifications framework for lifelong learning (DQR, 2011).

3.2. Curricula

Traditionally ([8]) a curriculum has been understood as a plan for instruction or as a specification of what should be taught within a subject or discipline. Curricula are developed at different levels (at national level as well as within one institution) and with varying scope and depth. They can be written by teachers or institution managers and often use language related to pedagogy and subject disciplines, explaining to potential learners what they are expected to know and understand at the end of the learning process. Learning outcomes increasingly influence the definition and design of curricula and the understanding and definition of the term curriculum itself. The shift to learning outcomes frequently implies that teaching and instruction methods should not be predefined but be chosen with reference to expected outcomes and the context in which these are to be realised. This also implies that curricula are not exclusively written for teachers but should equally inform learners about what they are expected to know/do and understand. According to Harden et al. (2002; 2007) the benefits of learning outcomes-based curricula are numerous:

([8]) A listing of 44 definitions of the term curriculum illustrates the tension between focusing on teachers/instructors and students/learners.

(a) help to provide clarity, integration and alignment within and between a sequence of courses;
(b) promote a learner-centred approach to curriculum planning;
(c) encourage a self-directed and autonomous approach to learning, as students can take responsibility for their studies, and are actively able to gauge their progress;
(d) promote a collegial approach to curriculum planning, as instructors collaborate to identify gaps and redundancies;
(e) ensure that decisions related to the curriculum and learning environment are streamlined;
(f) foster a philosophy of continual monitoring, evaluation and improvement;
(g) help to ensure accountability and assure quality of education programmes

Learning outcomes help align curriculum and provide structure for student learning. The advantage of detailed learning outcomes specifications is to give a clear steer to teachers, assessors, learners and future employers. However, too precise learning outcomes risk excluding opportunities for local and individual adaptation and development. When developing and reviewing learning outcomes in curricula, it is important to note that the learning process cannot be fully predicted and described; curricula need to be open to individual adaptation and flexibility and to the unexpected. A key challenge, therefore, is to strike the balance between predictability/prescription and flexibility/openness. This tension and dilemma take many different forms depending on the following elements:
(a) length of the description;
(b) structure of the description;
    (i) bullet points;
    (ii) narrative;
    (iii) level of detail/granularity;
(a) whether priority is given to:
    (i) specification of teaching and instruction processes;
    (ii) acquisition of theoretical and/or practical knowledge;
    (iii) development of skills related to tasks and functions;
    (iv) achievement of broader competences (including transversal ones).

Curriculum development requires clarification of ambition; are we aiming at the reproduction of knowledge or the ability to apply skills or competences independently? It also requires a clarification of borderlines; how narrow or broad is the domain of knowledge and skills addressed by the curriculum?

Box 1 illustrates the choices made when specifying learning outcomes in a (part) curriculum for the construction industry'.

Box 1. **Curriculum addressing high level module about managing teams in the construction industry**

This unit is about identifying the team resources that are needed to deliver a particular project and how the significant factors will impact on your team selection. You will:

- select the project team following contractual and statutory rules and recognised industry processes;
- be able to demonstrate knowledge of the working culture and practices of the industry and how you can work within these practices to understand people's needs and motivations;
- have an active knowledge of the recruitment and the retention of employees;
- confirm the work required in your area and ensure that the work is allocated to the appropriate individuals;
- demonstrate how you will monitor and motivate the individuals, show knowledge of formal appraisal systems and review and update plans of work in your area;
- identify stakeholders and establish working relationships with them and your colleagues. You will consult with them in relation to key decisions, fulfil agreements made, promptly advise them of any difficulties encountered and resolve any conflicts with them;
- produce evidence to show that you have monitored and reviewed the effectiveness of working relationships.

Source: European Commission (2011), pp. 23-24.

Another example (Box 2) shows the learning outcomes of a level 2 unit in cold food preparation.

Box 2. **Example of learning outcomes of a level 2 unit in cold food preparation**

At the end of the course the learner will be able to:

- know and understand about the production of agricultural products which adhere to organic farming principles and regulatory and advisory frameworks;
- communicate to peers and consumers the importance of maintaining a healthy soil as the basis of organic production;
- apply judgment skills to assess the degraded soil and use qualitative and quantitative measures to restore it;
- produce organic crops according to a quality controlled and productive mechanism;
- produce organic livestock according to a quality controlled and productive mechanism;
- be responsible for the production of crops and livestock, and the maintenance and restoration of degraded soil according to the principles of organic farming and regulatory and advisory frameworks;
- make a personal assessment of whether one shall proceed to further learning.

Source: European Commission (2011), p.23.

Chapter 4 provides a more detailed discussion of the use of learning outcomes in national VET curricula.

3.3. Qualification standards

Qualification ([9]) standards define the expected outcomes of the learning process, leading to the award of a full or partial qualification. Focusing on qualification rather than programme is a signal that the individual may follow different routes (programmes and individual learning paths) towards the final assessment. A qualification standard, compared to a traditional programme-bound curriculum, will be significantly more open to the validation of non-formal and informal learning.

The term qualification standard is not used consistently and reflects that most European countries avoid a too sharp distinction between qualifications and programmes, seeing them as complementary and interlinked. Many qualification standards are articulated at national level ([10]), reflecting input from various stakeholders (depending on the qualification type). In vocational education and training, qualifications standards normally answer questions such as 'what the student needs to learn to be effective in employment' and 'what the learner needs to learn to become an active citizen, supporting basic human and democratic values'. It varies in whether qualification standards are limited to labour market relevant skill or address a broader set of skills and competences relevant to life and society in general. As recently demonstrated by Cedefop (forthcoming a), the changing nature of labour market skills implies a stronger focus on transversal skills and competences, for example related to communication, social skill and problem-solving.

The example below (Box 3) is from the qualification standards for logistics competence developed by the European Logistics Association (ELA). Having been aligned to the EQF, these qualification standards have been developed with and agreed by industry. They are outcome-based and form the basis of assessment.

([9]) The Recommendation on the establishment of the EQF for lifelong learning defines qualification as 'formal outcomes of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to a given standard' (European Parliament and Council of EU, 2008, p. 4).

([10]) For example, the national *Fagplan* in the Norwegian vocational education and training system indicates the overarching objectives for a qualification.

Box 3. **Examples of qualification standards for logistics professionals**

Supervisory/operational management level – European junior logistician – EQF level 4

Business principles
- 4.1.01.01 Understands the elements of a profit and loss (P&L) statement and balance sheet
- 4.1.01.02 Understands the meaning of financial terminology
- 4.1.01.03 Calculates the costs of inventory holding
- 4.1.01.04 Monitors supplier and customer payment terms
- 4.1.01.05 Understands the importance of benchmarking in performance management
- 4.1.01.06. Understands the link between shareholder value and supply chain improvements
- 4.1.01.07. Describes the use of 4Ps in a marketing plan

Core management skills
- 4.1.02.01 Plans own and team professional development
- 4.1.02.02 Understands the principles of change management
- 4.1.02.03 Participates in cross functional teams
- 4.1.02.04 Has good oral and written communication skills
- 4.1.02.05 Demonstrates decision-making ability
- 4.1.02.06 Chairs meetings
- 4.1.02.07 Manages a team

Source: ELA (2014). *European qualification standards for logistics professionals*.

3.4. Occupational standards

Occupational profiles or standards ([11]) are normally set outside the education and training system, by labour market stakeholders, but can have significant impact on the way learning outcomes statements are defined and written. As with qualifications standards, the term occupational standard is not used by all countries but refers to functions which are common across Europe. In VET, the functions addressed by qualifications and occupational standards frequently form an integrated and interwoven part of the review and renewal of national curricula (see also Chapter 4). Occupational profiles or standards specify 'the main jobs that people do', describing the professional tasks and activities as well as the competences typical of an occupation. Occupational

([11]) As with qualifications standards, the term occupational standard is not used everywhere but refers to a function which can be identified in most countries. In some countries, for example Germany, the functions of qualifications and occupational standards are closely interwoven (in the German VET sector, candidates will be awarded a qualification containing *Berufsbezeichnung* (occupational title), signalling a close relationship between occupation and qualification).

standards signal what individuals must be able to do in employment and can ideally serve as a link between education and training and the needs of the labour market. Box 4 shows (part of) an occupational standard for an executive assistant. It is worth noting that the standard says nothing about the training required to achieve these outcomes.

Box 4. **Example of occupational standard: set up and maintain retail food operations**

Prepare for retail operations

You must be able to:
- agree and confirm standards and targets for retail operations to meet business requirements;
- provide sufficient and relevant supervision and support to enable your team to meet specified targets and standards;
- allocate resources to ensure that standards and targets are met;
- allocate tasks and instruct relevant person(s) to ensure that standards are met.

Maintain the effectiveness and efficiency of retail operations

You must be able to:
- monitor that standards and targets are being met;
- identify and sort out problems in retail operations within the limit of your responsibilities;
- measure work outputs and achievements against targets;
- check that all records and documentation comply with company policy.

Source: UK national occupational standards: *IMPSO419Sv2: set up and maintain retail food operations,* p. 2.

An occupational standard will normally differ significantly from a curriculum or qualification standard. A curriculum or qualification standard needs to look beyond the specific functions of a single job or occupation and prepare learners for various jobs and occupations which inevitably will change over time. The way occupational standards are developed also matters, directly influencing how broad or narrow are the functions included in the standard ([12]).

In the example below (Table 4), occupational standards are considered a description of the basis of learning outcomes for training and learning at work. They are focused on 'functions', defined as the activities a person is expected to do as part of their job; 'tasks', the specific recognisable activities that are carried as part of this occupation; and 'competences', describing

([12]) For a detailed discussion of alternative approaches see Erpenbeck and von Rosenstiel (2003).

what the individual needs to do to carry out each function of an occupation to a satisfactory standard.

Table 4. **Example of a standard for a travel agency operator: catering and tourism sector**

The agency operator independently performs work activities, in a travel agency, related to travel and stay of tourists at the tourist destination. She/he plans, creates and calculates travel arrangements according to client desires, conducts promotional activities, sale and collection of payment of travel arrangements.

No	Occupational functions	Occupational tasks	Occupational competences
1.	Planning and organisation of activities	She/he plans and organises his/her own working activities	1. Knows the organisation of work in a travel agency 2. Knows how to use the computer technology and software applications in performing the working tasks 3. Prepares working documentation 4. Organises his/her own daily activities 5. Follows new developments in the tourism and catering using ICT 6. Coordinates his/her own activities with the activities of his/her collaborators.
2.	Preparation for work	Prepares the workplace for work	1. Follows the dress code 2. Knows and identifies the functionality of technical and communication devices 3. Checks communication via email and social networks 4. Prepares an operational plan of daily activities 5. Uses systems for booking via Internet and global booking systems
3.	Operational activities	Provides information and advises clients	1. Welcomes, greets and carefully listens to client demands 2. Knows the entire offer of the travel agency regarding travel arrangements and other services 3. Explains in detail the services offered by the travel agency, as well as the conditions under which they are provided 4. Presents the current travel offers

Source: North Macedonia, Ministry of Labour and Social Policy (2017). *Methodology for the development of occupational standards (OS),* approved by Decision 08-5015/1, 25.7.2017.

The degree to which occupational standards are designed to interact with education and training systems differs. The Norwegian 'Balancing Act' project (in the retail sector) was explicitly developed (VIRKE and Skjerve, 2020) to act as a bridge between the labour market and the education and training system. The project, developed through cooperation between social partners and key employers in the sector, provides an interesting example of how to clarify terminology and improve dialogue in this area. Operating with three main competence balance-points (people-technology, flexibility-routines, and pace-presence), the approach points to key competence challenges to be addressed at work but which remain crucial when moving to formal education and training. The key principles of the project are illustrated in Table 5.

Table 5. **Skills standard: shop manager**

Building teams	Analytical skills	Training	Sales channels	IT literacy
People and technology				
• Can assess their employees' strengths and weaknesses, taking into account their preferences and potential for further development, and carry out strong development and training processes for both the individual and for the shop/department. • Is aware of their responsibility to motivate their employees to participate in further training, can follow up on this skills development, and ensure that their new skills can be used in their daily work. • Can build good teams, ensure that they work as intended, and can develop better and new ways of solving tasks.	• Has a solid, professional understanding of sales through different channels in order to secure customer loyalty, good customer service and positive sales and purchasing experiences. • Has a knowledge of which IT tools are relevant for the individual employee and how they are used. • Has an analytical understanding of all the relevant data, and can compile these to make solid decisions.	• Has an in-depth knowledge of computer programmes in both theory and practice.		

Improvement efforts	Sales expertise	Economic understanding	HR management
Flexibility and routines			

- Can identify and assess all areas in which there could be improvements, make plans to undertake these, communicate them to the employees, and then follow up on this systematically.
- Understand which decisions require consultation, and which can be taken themselves, to ensure high productivity levels and the understanding and use of the opportunities for action they have available to them in regard to innovative thinking.
- Has a basic understanding of the connection between decisions made on a daily basis and their economic consequences.
- Can create strong and relevant sales goals, follow them up, and maintain focus on these goals in the long term.
- Is aware of the importance of their position as a role model and how they should live up to the principles expected of management, and to ethical guidelines.
- Has a basic insight into the shop's competition both within the industry and locally, and can initiate measures for better positioning and increased market share.
- Is confident regarding regulations and methods for recruitment, delegation, HSE, termination of employment, information, feedback and other relevant areas that are key to strong management.
- Masters staffing management, such that the shop has the appropriate staff working with the right skills at the right time to meet the customer and the flow of goods.
- Has an independent overview of the stock, concepts and suppliers in order to ensure a holistic understanding of the choice of goods, so that the shop is adapted to the customer base.
- Knows which key figures are used to follow up on finances and profitability, and can then analyse these as a base for making good decisions.
- Can use accounting, key figures and knowledge of local conditions to plan initiatives, campaigns and seasons for both the short and long term.

Guidance	Customer service	Mastering complexity	Timing
Pace and presence			

- Has the ability to master the great complexity that exists in the relationship between people and tasks, in such a way that the highest priorities are achieved and that the work is carried out to high quality and efficiency.
- Can assess and plan for the correct use of time according to the specific goals and, through this, act as a good role model.
- Can assess who is in need of guidance and in which situations it is important for the manager to be present. Can provide good guidance to all by working together alongside the employees in various situations and facilitating good dialogue.
- Is conscious of their own service behaviour, has the knowledge and skills to generate exceptional customer experiences and can give constructive feedback to the employees in light of their own customer service.

Source: Adapted from VIRKE and Skjerve (2020).

Another interesting approach is exemplified by the European Asylum Support Office (EASO) training curriculum, which is specifically designed to provide common vocational training for employees of the Immigration and Asylum Services in EU Member States. Learning outcomes, for asylum and reception

officials are only relevant if they can be linked and useful to the performance of job-related tasks in the area of asylum and reception. The occupational standards establish the knowledge, skills, responsibility and autonomy related to job-tasks and duties for asylum and reception officials. It is important that 'the main job that people do' in a particular area is specified in occupational standards. These occupational standards describe professional tasks and activities, as well as the job competences typical of an occupation. The occupational standards align with the learning needs of the individual asylum and reception official, and can have significant impact on the way learning outcomes statements are defined and written, as can be seen in Table 6.

Table 6. **Occupational standards for asylum and reception officials**

Competence area	Asylum and reception generic competences		
Law, policy and procedures	Level A	Level B	Level C
Basic knowledge of	Relevant asylum-related law, policy and procedures, according to the national/EU / international legal framework	National and European jurisprudence and case law related to asylum in the context of national, international and EU legal frameworks	Concepts relevant to asylum law and procedural requirements related to complex and specific international protection issues (i.e. exclusion, cessation, revocation)
Ability to	Apply asylum related law, policy and procedures within the scope of the individual role	Provide verbal and/or written legal and procedural advice on standard asylum issues to all stakeholders	Provide verbal and written legal and procedural advice on non-standard and/or complex asylum related issues to all stakeholders
Take responsibility to	Comply with the basic legal framework within the scope of the individual role		

Source: EASO.

3.5. Assessment criteria

Assessment specifications identify the criteria underpinning assessments. These criteria, using learning outcomes statements, are often formulated as threshold levels which must be met by the candidate. Assessment standards and the criteria they use are more detailed than qualifications standards and curricula, in the sense that they must describe the requirements precisely to the learner. These requirements normally support summative assessments at the end of the learning process, but can also orient formative assessments taking place throughout ([13]).

Table 7. **Learning outcomes for qualification module Communicate in a business environment, UK-England (extract, three of eight ILO areas)**

Learning outcomes The learner will:	**Assessment criteria** The learner can:
Understand the purpose of planning communication.	1.1 explain the benefits of knowing the purpose of communication […] 1.4 describe different methods of communication and when to use them
Understand how to communicate in writing.	2.1 identify relevant sources of information that may be used when preparing written communication […] 2.11 describe organisational procedures for saving and filing written communications
Be able to communicate verbally.	7.1 verbally present information and ideas to others clearly and accurately […] 7.6 summarise verbal communication(s) and make sure that the correct meaning has been understood

Source: The NVQ platform – Everything you need to know about your NVQ course: *NVQ courses in Business management*

([13]) The goal of summative assessment is to evaluate student learning at the end of an instructional unit by comparing it against some standard or benchmark. This contrasts with formative assessment where the purpose is to monitor student learning to provide feedback that can be used by instructors to improve their teaching and by students to improve their learning. Formative assessment helps students identify their strengths and weaknesses and helps teachers and trainers support student progress. Learning outcomes should be written in ways which also support formative assessment, a point discussed in Part III of this handbook.

Assessment standards play a critical role in deciding the orientation of the learning outcomes approach. Table 8 illustrates the relationship between learning outcomes written for a qualification module and their associated assessment criteria. Assessment specifications can also indicate how a learning experience is to be graded, indicating how learning can be achieved at different levels of complexity and proficiency. According to Moon (2002) assessment criteria may be developed fully from the learning outcome or partly from the nature of the assessment task, but in either case they must relate to the learning outcome. The example below illustrates how learning-outcomes-based criteria inform the assessment process:

Table 8. **Example of assessment criteria in essay writing**

Learning outcome – Level 2 B. Ed programme At the end of the module the learner will be expected, within the context of a class situation, to demonstrate and evaluate the use of appropriate examples of positive reinforcement for the purpose of the improvement of behaviour.
Assessment method In the context of three teaching sessions, observed by her mentor, the student will demonstrate three examples of positive reinforcement in the class situation as a means of encouraging improvement of behaviour.
Assessment criteria
• The learner will demonstrate at least three examples of positive reinforcement in order to improve behaviour.
• The examples will show that the learner understands the principles of positive reinforcement.
• They will be appropriate to the context and situation within the classroom at the time.
• The learner will be able adequately to evaluate the effectiveness of her own actions and the consequences of it, recognising any obvious ways of improving her practice.

Source: Moon (2002).

However, for learning outcomes to support high quality assessment, a number of conceptually challenging issues must be considered. First, an important distinction must be drawn between content and construct validity. While content validity refers to a phenomenon (for example tasks or skills) which can be directly and unambiguously observed, construct validity measures performance indirectly and in relation to a theoretically constructed reference. A good example of this is ‘intelligence’ but also ‘basic’ and ‘transversal skills’ like communication, cooperation, creativity and learning to learn. The issues involved in relation to construct validity may appear as technical but will

directly influence the ability of validation methodologies to capture complex individual learning experiences. Overlooking this distinction may create a bias towards the easily observable tasks and skills, and away from the more complex (and sometimes more important) underpinning competences. Second, the quality of the learning outcomes-based standard or reference point very much depends on a clear definition of the domain of knowledge, skills and competence addressed. Irrespective of where a standard or reference is to be used, the boundaries of an area must be identified, defined and agreed ([14]).

([14]) Definitions of domains can be supported in various ways; for example, by referring to occupational or educational classifications and standards. We can also observe that more generic reference points are used (for example Blooms taxonomy) and a wide range of classifications of transversal skills and competences. Terminological tools and initiatives alike O*NET and ESCO also point in this direction, providing a basis for defining borderlines and identifying domains. In the same way as stated above for learning outcomes and criterion referencing, the definition of domain will directly influence the validity of the validation exercise and will depend on the purpose of the validation. See also discussions in Chapters 5 to 7.

CHAPTER 4

National curricula: dilemmas and opportunities

The purpose of this chapter is to illustrate and analyse in more detail the dilemmas and opportunities involved in defining and describing learning outcomes for national curricula. Using examples from vocational education and training in Germany, Greece and Norway, the chapter points to similarities as well as differences in the application of learning outcomes at this level. The lessons from this comparative exercise will eventually inform the 'rules of thumb' provided in the final part (IV) of this handbook. All the three cases cover EQF/NQF level 4 qualifications, addressing retail, e-commerce, automobile mechanics and construction. While the German and Greek cases address the national VET curricula in general, the Norwegian case illustrates the way the subject of mathematics has been integrated into overall VET programmes.

4.1. German framework (national) curricula for retail and e-commerce

In Germany, federal framework curricula (*Rahmenlehrpläne*) orient the content and profile of VET programmes ([15]). A German framework curriculum is based on the following elements:

(a) a general part describing the mandate and goals of vocational education and training, notably explaining the concept of *Handlungskompetenz* (competence to act);
(b) a listing of the different general learning fields and specialisations within the programme ([16]);
(c) a detailed description of the different learning fields and the expectations of learners.

([15]) Resolution of the Conference of Ministers for Education of 12 March 2015 on the Framework Agreement on Vocational Schools (version of 9.9.2021).

([16]) This can differ within curricula; for retail, this constitutes a listing of 14 different learning fields with 880 work hours overall within a 3-year programme.

As the learner progresses from one learning field to another (in the case of retail a total of 14 learning fields are described), the level of difficulty and/or complexity) grows, as does the occupational-specificity of the task at hand.

While learning outcomes are not referred to as such, the terms 'competence' and 'competence to act' are used in a similar way, focusing on what a learner is expected to know, be able to do and understand having completed a programme. For a student to demonstrate competence, he or she must independently be able use knowledge and skills in real work or study situations, for occupational as well as personal development (BMBF and KMK, 2013; Gehmlich, 2009).

The following sections show how the curricula are constructed, in this case illustrated by e-commerce and retail variants.

Part I – Preliminary Remarks (Teil I – Vorbemerkungen)	
e-commerce	**Retail**
Independent and responsible thinking and acting as the overarching goal of training is preferably taught in those forms of teaching in which it is part of the overall methodological concept. In principle, any methodical approach can contribute to achieving this goal; methods that directly promote *Handlungskompetenz* are particularly suitable and should therefore be given appropriate consideration in lesson design.	The framework curriculum is generally based on the level of the lower secondary school leaving certificate or comparable qualifications. It does not contain any methodological specifications for teaching. The framework curriculum describes occupation-related minimum requirements with regard to the qualifications to be acquired.

Both curricula avoid specification of teaching and instruction methods and underline the need for local and individual adaptation and flexibility. This adaptation is directly linked to the needs of the individual learner and for adapting teaching and instruction accordingly. This is further underlined in Part II of the structure where the mandate of the schools is outlined:

Part II – Vocational Schools' Mandate (Teil II: Bildungsauftrag der Berufsschule)	
e-commerce	**Retail**
• To enable learners to develop occupational flexibility to cope with the changing demands of the world of work and society, also in view of European integration; • To address core problems of our time in general instruction and as far as possible within the framework of occupation-related instruction, e.g. work and unemployment, peaceful coexistence of people, peoples and cultures in a world under preservation of cultural identity, conservation of natural resources, and guaranteeing of human rights.	• To enable learners to fulfil the specific tasks in their occupation and to help shape the world of work and society in a socially, economically and ecologically responsible manner, especially against the background of structural change. This includes promoting young people's competences for personal and structural reflection, lifelong learning, and individual flexibility and mobility within European integration.

Addressing the changing nature of the labour market and society, flexibility and adaptation emerge as key objectives in both cases ([17]). This section also illustrates the broader objectives addressed by vocational education and training; the importance of broader competences, beyond specific occupational skills, is clearly acknowledged.

Part III – Didactic Principles (Teil III: Didaktische Grundsätze)	
e-commerce	**Retail**
• Didactic points of reference are situations that are significant for occupational practice. • The starting point for learning is action, if possible carried out, or at least comprehended, by the students themselves (learning by doing). • Actions must be planned, carried out, checked, corrected if necessary and finally evaluated by the learners as independently as possible. • Actions should promote a holistic understanding of the occupational reality, including technical, safety-related, economic, legal, ecological, and social aspects. • Actions must be integrated into learners' experiences and reflected upon in terms of their social impact. • Actions should also include social processes, e.g. of declarations of interest or conflict resolution.	• Didactic points of reference are situations that are significant for occupational practice • Learning takes place in complete actions, if possible carried out, or at least comprehended, by the students themselves • Actions should promote the holistic comprehension of the occupational reality, for example technical, safety-related, economic, legal, ecological and social aspects • Actions should take up the experiences of learners and reflect them with regard to their social impact • Actions also take into account social processes, for example declarations of interests or conflict resolution, as well as different perspectives on career and life planning.

([17]) Such as unemployment, peaceful coexistence of peoples, peoples and cultures in one world while preserving unique cultural identity, conservation of the natural resources as the foundation of life, as well as the guaranteeing the human rights of everybody.

These didactic principles stress the centrality of practice-based and situated learning. The focus is not on the methods as such but on organising the learning experience in a way which enables student to acquire knowledge, build skills and gain understanding. For individuals to develop their competences, they cannot be mere recipients of knowledge but need to be actively involved and engaged in the learning process.

Building on this general orientation, parts IV and V points to the labour market and occupationally specific related parts of the curricula. Critical for this is the concept of 'learning fields' (*Lernfelder*) which defines thematically, functionally and occupationally interrelated learning areas. Deduced and developed from parallel activity areas in the labour market, the learning fields demonstrate the clear occupation (*Beruf*) orientation of German VET.

Part IV and V: Occupation-related preliminary remarks and learning fields (Teil IV: Berufsbezogene Vorbemerkungen und Lernfelder)	
e-commerce	**Retail**
Learning field 1: Representing the company	Learning field 7: Accepting, storing and maintaining goods (competences like problem-solving are involved)
The learner (is expected to) ... action verb (list of verbs) ([18]): • explain the company's mission statement, its economic and ecological objectives and its overall social responsibility • independently obtain information from the training company and keep this information up to date. • develop ways of obtaining accessible information about other companies, evaluate the chosen form of business in connection with the range of products and the form of sale and compare their training companies. • apply problem-solving methods, reflect on the interaction of personnel in a retail company and deal with the regulations as well as the tasks, rights and obligations of those involved in the dual system of vocational training. • recognise the necessity of social security and private provision in the Federal Republic of Germany, taking into account collective bargaining in the retail trade, and assess the significance of collective agreements and the role of the social partners in bringing them about. • present and document their work results in a structured and addressee-oriented manner using appropriate media.	*The learner (is expected to) ... action verb (list of verbs) ([19]):* • examine the incoming goods and take care of proper storage. • detect duty infringements through the supplier, document them and initiate appropriate measures for their removal. • communicate in a solution-oriented manner with suppliers. • control the goods based on receipts and record the items with the use of an information technology system as well. • store goods and follow significant storage principles in the sales and/or reserve warehouse. • analyse key figures, carry out stock calculations, evaluate them and demonstrate optimisation opportunities. • When handling packaging, they take into account financial, legal and ecological aspects.

While the action verbs used in these statements can be considered ambiguous, the object and context are elucidated by providing a 'how-to' instruction ('to this end') and clarified by laying out specific directions for documents to be researched ('training and employment contracts', legal regulations', 'youth employment protection'). In this way, German VET curricula strike a balance between learning outcomes statements that are measurable while remaining relatively open to individual and contextual adaptation.

([18]) This section is based on a representative comparison of learning outcomes statements of learning field 1.

([19]) This section is based on a representative comparison of learning outcomes statements of learning field 7.

4.2. Greece: automobile technician and marketing officer

In Greece, VET curricula are issued by the Ministry of Education and applied on a national basis. The learning outcomes principle has only been applied systematically since 2013 ([20]) and the reform of secondary education ([21]). Seeking to strengthen the match between the educational offers and employment requirements ([22]), the shift to learning outcomes was seen as instrumental for improving the dialogue between the education system and labour market. Greek curricula (pre-2013) include the following elements:

(a) explicitly stated aims for each subject, in the context of the general and grade-specific aims of education;
(b) syllabus ([23]) organised in units;
(c) indicative guidelines on the method and the teaching materials per subject.

Given delays in updating existing curricula, a significant part of the Greek VET still operates according to pre-2013 curricula. This is exemplified by the 2008 vocational education curriculum of automobile (vehicle) technician ([24]), at EQF level 4 ([25]). An automobile technician carries out diagnostics, repairs and replacements of a mechanical, hydraulic and electrical nature on light

([20]) Law 4186/2013 stipulates that vocational education and apprenticeship programmes will include clearly formulated learning outcomes and will be analysed in knowledge, skills and competences per subject, field and specialty.
([21]) Law 4186/2013 on restructuring of secondary education and other provisions. *Official Gazette*, 193/A, 17.9.2013.
([22]) Students of vocational upper secondary schools, according to law, are offered a choice of nine sectors in the 2nd grade, while in 3rd grade they are offered a choice of 36 specialties. During their enrolment in grade C, students can apply for any specialisation of the sector that they attended in grade B. The sectors and the respective specialisations are defined by ministerial decision Φ20/82041/Δ4/20-05-2016.
([23]) A syllabus or specification is a document that communicates information about a specific academic course or class. It is generally an overview or summary of the curriculum
([24]) A similar term is used for the Vocational training diploma initial vocational training (I.E.K.) Level 5 Specialty of I.E.K: Automobile technician.
([25]) The curriculum was published in the *Official Gazette* FEK 1277/02.07.2008.

vehicles ([26]). The holders of this qualification can access the labour market and practise this profession, can continue their studies in relevant higher education institutions or at the Greek vocational training institutes (IEK) ([27]). They can be employed in automobile service companies, in car repair and maintenance companies, in power units using internal combustion engines, in vehicle control services and organisations, companies trading in electrical and electronic vehicles as well as freelance.

The curriculum starts by specifying the teaching units and the learning aims/objectives connected to these. Units are divided into theoretical and practical part Learning aims are broad statements indicating the specific areas to be covered by the teacher and learned by the student. For specific subjects, i.e. machining technology, the role of the student is oriented by action verbs clarifying expectations. The following structure is used.

Teaching units	Learning aims (the learner)
1. Introduction to machining technology	To describe the basic elements for machining technology, engineering, material strength, mechanical drawing, engine components, electrical engineering and sensors, thermal machines, internal combustion engines, vehicle handling, and techniques for dealing with vehicle pollution.
2. Introduction to types of engines	To describe the types of engines and the types of their subsystems in vehicles of conventional and new technology, and the basic principles of operation of a diesel oil engine, a petrol engine, the exhaust system and the law on noise, the basic principles of operation of fuel supply systems and their subsystems in vehicles (fuel pumps, nozzles, auxiliary oil pumps, etc.).
3. Principles of operation	To present the basic principles of operation for gearboxes, transmission systems, braking systems, suspension and steering systems, differentials – hydraulic systems, lubrication, and clutch systems.
4. Vehicle air conditioning systems	To explain the basic principles of operation of the vehicle air conditioning systems, analyse the basic principles of operation of air compressor systems.

([26]) A broad spectrum of subjects is taught in this sector: electromagnetism, mechanics, thermodynamics, vibrations and waves, electrostatics, electrodynamics, electronics, dynamics, statics and fluid mechanics. Students are expected to use knowledge and insights from mathematics, science, engineering and computational thinking (at a more advanced level). They need to deal carefully with dangerous situations and safety and environmental regulations.

([27]) The graduate can obtain the professional licences as: an engineer (this requires a degree and 2 years of service), brake or suspension technician (degree required and 2 years of service) diesel or pump technician (degree required and 1 year of service) motorcycle and moped technician (requires a degree and 1 year of service) electrician or instrument technician (requires a degree and 2 years of service) technician for exhaust systems (mufflers) or refrigerators or wheels.

The approach can be characterised as predetermined and fixed. While teaching units and associated learning aims are described in some detail, adaptation of these to changing contexts and individual needs is not addressed. Learners are expected to be able to 'describe' (and in one case 'analyse') the occupational areas listed. The focus is thus on the ability to reproduce knowledge for assessment, not necessarily to apply competences independently in the real world. Learner autonomy and self-realisation of the individual is not promoted; the curriculum focuses on the 'what' rather than the 'how'.

The curriculum is perceived as content-oriented, in which, according to Clark (1987) 'the elements of knowledge are sequenced from simple to complex'. Its methodology is teacher-directed, and its general aim is to promote intellectual capacities such as memorisation and imitation. By putting behavioural objectives to the fore, content is primarily seen as a means to achieve the learning aims of the course (Andrich, 2002).

Focusing on the knowledge and specific skills required for the automobile technician (as presented in the table below) we see that learning outcomes statements are described in specified, quantifiable and measurable terms, oriented solely on functional performance.

Knowledge
Identifies the fuels and the lubricants used.
Lists the instruments for technical measurements and testing (callipers, micrometers, multimeters, and automation instruments).
Skills
Manages the wastes created (hydraulic liquids, lubricants, air filters, oil filters, etc.).
Checks the engine and its subsystems in vehicles of conventional and new technology.
Selects the suitable tools (manual) and uses them properly and with safety.

However, the same qualification (automobile technician) at a higher level, (EQF level 5), offered by a Greek vocational training institute (IEK) ([28]), shows different learning outcomes statements, emphasising autonomy and responsibility with the use of adjectives such as 'constructive' and 'unproblematic' and adverbs like 'properly' as seen hereafter:

([28]) See the description of the qualification for automobile technician.

Knowledge	
Describes the basic fire-fighting techniques, the risks related to the use of fuel, and the prevention measures.	Presents basic software for his/her work using a computer.
Skills	
Uses advanced diagnostics methods (LED, parallel, OBDI & OBD II).	Properly operates and maintains tools, machinery and devices, considering general instructions, technical specifications, technical manuals, regulations and specifications regarding work safety.
Competences	
Develops constructive and unproblematic collaborations through proper communication both with the customers and with their colleagues, whether receiving or executing instructions.	Works by combining the above knowledge and skills in different environments, through a dependent-employment or freelancing relationship, as an employee of a small or large business or autonomously, taking the initiative and adjusting his/her behaviour to the various conditions.
Acts both under the instructions of an engineer/ superior and autonomously, within the framework of responsibility that applies to him/her from the applicable law.	Perceives the risks in every stage of work and promptly takes the necessary safety measures.

A slightly different approach is presented by the 2008 curriculum ([29]) referring to the specialisation in a car's mechanical and electrical system. Emphasis is given to extra-curricular activities to be pursued during the school year (e.g. participation in special competitions such as construction of models) and at the end of the school year (exhibition of student works such as a car engine in full operation, photo exhibitions) as well as organisation of workshops and school events (technical inspection of vehicles in simple form or control-measurement of exhaust gases). The actual curriculum, however, follows the same approach as above:

([29]) *Official Gazette* FEK 1268B/2008, 2.7.2008.

Teaching units	Learning aims The learner should:
1. Basic concepts of electricity 1.1. Electricity: conductors and insulators 1.2. Instruments for measuring current, resistance and power	• Define the concepts: of electricity, of pipes and insulators. • Indicate the units of measurement of the basic sizes of electricity.
2. Car electrical system 2.1. General reference to parts of the electrical system. Purpose of each system 2.2. Car electrical components of: protection fittings, conductors, wiring, terminals and connectors, switches, relays, potentiometers. *Laboratory* Exercise 2.1 Demonstration and identification of components of what was taught	• Indicate the parts of the electrical system of a car and describe their purpose. • Define the concepts of all components of the electronic circuit taught. • Recognise and control components taught.

The learner is again asked to define, observe and indicate, not to act independently in real life situations. Implicitly the focus is on 'what' rather than 'how', knowledge rather than skills and competence, inviting reproduction of knowledge rather than application of skills or competences. This bias is strengthened by a lack of conceptual differentiation (for example between general, occupation-specific, and transversal). Focusing implicitly on technical and occupational tasks and functions, broader core and personal skills and competences are overlooked. It can be argued that these latter are crucial for independent application of skills and competences in real life and work situations.

As a result of Law 4186/2013 that set up the EPAL apprenticeship class, a ministerial decision on a quality framework for VET curricula was adopted in 2017 ([30]), including the definition of learning outcomes and the connection with occupational profiles. The curricula would include explicitly the stated learning outcomes sought, analysed by knowledge, skills and competences, per subject, sector and specialisation, and teaching material would be prepared in line with the learning outcomes sought for each subject. The example below is taken from the 2017 vocational education curricula (EPAL) which were developed for the specialisations of the Department of Administration

([30]) Ministerial Decision 26412/2017 on the quality framework of VET curricula. *Official Gazette*, 490B/2017, 20.2.2017.

and Economy ([31]) at EQF level 4 ([32]). The example in Table 9 is from the specialisation Marketing and advertising officer.

Table 9. **Marketing Applications (3E)**

The course is of a practical nature and requires developing case studies and presentations of best practices followed by visits to real businesses or meeting business experts. The creation of a complete marketing plan is needed. The implementation of the project is proposed to be carried out in groups of two or three students so that the students develop team building/collaboration and communication skills. Students in groups can undertake the implementation of market research actions/projects and record analyse compare and present findings and conclusions.		
Learning outcomes	**Teaching units**	**Indicative activities**
The learner (is expected to) action verb (list of verbs):		
1.1 Explain the role and responsibilities of a brand manager.	1. Introduction: The strategy and the marketing mix – the 4 p's, and brand management.	1.1 Students in groups study marketing products and are presented the role of a brand manager by a guest speaker – (executive marketing).
		1.2. In the course students can choose the creation of a marketing plan for a local product or for an individual / family business which they consider they may deal with in their first professional steps.
2.1 Define the appropriate positioning of a product based on market research results.	2. Market segmentation, definition and positioning of the brand name	2. In the context of marketing plan, once they have recorded the consumers (existing or potential) needs, they attempt to distinguish individual market segments, make a competition analysis and choose the market segment considered more attractive to the product.
2.2 Identify the elements that form a unique sale proposal for each brand (unique selling proposition).		

([31]) The following four specialties operate in the Department of Administration and Economy of Greek Vocational Schools (EPAL): 1-Administrative and Financial Services Employee; 2-Employee of Tourism Enterprises; 3-Marketing and Advertising Officer; 4-Warehouse and Supply systems employee. See the curricula.

([32]) Similarly, the 2018 curriculum of Italian and Spanish language for the tourism industry employee was designed based on learning outcomes. *Official Gazette*, 3976B/2018, 13.9.2018.

The course is of a practical nature and requires developing case studies and presentations of best practices followed by visits to real businesses or meeting business experts. The creation of a complete marketing plan is needed. The implementation of the project is proposed to be carried out in groups of two or three students so that the students develop team building/collaboration and communication skills. Students in groups can undertake the implementation of market research actions/projects and record analyse compare and present findings and conclusions.

Learning outcomes	Teaching units	Indicative activities
3.1 Explain the basic factors to be considered by pricing design policy (3 c's: customer, cost, competition).	3. Pricing policy	3. They compare prices and define the pricing policy of business and online stores.
3.2 Evaluate alternative strategies and pricing policies depending on product category and placement of each brand.		
4.1 Plan communication actions within a complete and integrated communication programme (e.g. promotional actions at points of sale, content selection advertising messages and a mixture of media, direct mail configuration).	4. Communication and Promotion Policy	4.1. They present and evaluate good practices.
4.2 Apply practices and service techniques (after sale service) and deal with complaint management.		4.2. Students design one complete communication plan, choose or/and design the logo of the product/service (e.g. target audience, main, communication message, transmission frequency). They are asked to show their creative skills, shaping the content of the communication plan (advertising messages, promotional material, direct marketing actions).

Source: Cedefop, based on vocational education curricula (EPAL).

We observe in this example that the learner is asked to act independently in real life situations. Contrary to the 2008 curriculum, the focus is implicitly on the 'how' rather than the 'what', the skills and competences rather than

knowledge. The students are asked not only to explain basic elements of marketing but also demonstrate transversal skills, the ability to collaborate in teams and network, to evaluate and make informed choices. The action verbs used in these curricula put the emphasis on the learner's potential and their ability to be actively involved and engaged in the learning process. By taking part in promotion and communication actions of the company/organisation (advertisements, sales promotions, marketing, and public relations) they become active recipients of knowledge and attempt to apply independently skills and competences acquired in real life situations.

Following the 2013 law and the 2017 ministerial decision, vocational education schools (EPAL) and vocational training institutes (IEK) curricula will be further upgraded with the new 2020 law ([33]) as its main pillar is the definition of clearly learning outcomes statements in VET curricula and teacher training.

4.3. Norway: mathematics for initial VET (building and construction)

Any national curriculum needs to articulate the way different forms of knowledge, skills and competences are combined and balanced. One of the key challenges is how to integrate basic knowledge subjects like mathematics, science and languages with other skills and competences, both occupationally specific and transversal. The learning outcomes approach can potentially help to clarify intentions in this area and the following section builds on the Norwegian experiences from 2006 and onwards to illustrate challenges and opportunities in this area.

Following initial VET reform in 1994, the current curriculum for mathematics for initial VET in Norway has been influenced by the knowledge promotion reform of 2006. The focus of the reform was to strengthen students' reading, writing and mathematics capabilities, measured with reference to their oral skill, reading, writing, digital skill and numeracy. In the 1994 curricula, all programmes at upper secondary school, general as well as vocational, were given the same curriculum for mathematics ([34]). The curriculum was built with nine overarching goals, each accompanied by learning outcomes ([35]).

([33]) Law 4763/2020 on the national vocational education system, training and lifelong learning.
([34]) This meant that VET shared its curriculum with general education (GE).
([35]) Only the first five of the goals are shared for all programmes, the last four are just for GE. This is arranged so it would be easy for VET students to change programmes and attain the right to go university and university college after graduating.

The curriculum for VET consisted of the first five goals and were divided in two sections. The two first goals defined skills, attitudes and perspectives that are transversal for the subject. The last three were focused on content. A learning outcome for the first section would look like:

> 'The student shall be able to read and understand a simple mathematical text, be able to explain the content and be able to use it in problem solving.'

For students in vocational education, the general statement needs to be translated and used in a vocational context. These learning outcomes would be combined with one from the second section like:

> 'The student shall be able to process proportional and inversely proportional quantities graphically and algebraically.'

With the 2006 curriculum, mathematics was given a specialised curriculum for VET in Norway. Aiming for a better vocational contextualisation and integration, the curriculum for the VET students consisted of 13 learning outcomes written as competences:

> 'The student shall use and justify the use of formal similarity, scale and Pythagoras' theorem for calculations and in practical work.'

The change is in the use of verbs. The new learning outcomes are more concise, and they use more active verbs. Learning outcomes describe the desired competence, but do not use words like understand and read. The purpose is to make the learning outcomes easier to assess. Although the curriculum is written from a mathematics perspective, almost all the learning outcomes have a description that contains a reference to practical work. Compared to the previous curriculum it contains far fewer learning outcomes, and it is more targeted at VET. The learning outcomes are open and less binding. They are written in such a way to achieve adapted teaching, so students will be able to achieve the learning outcome at different levels.

Table 10. **Learning outcomes for mathematics in VET: Norway**

Curriculum learning outcome	Example of adapted learning outcome for construction and building
Goals for the education are that the student shall be able to:	
make estimations on answers, calculate real-world problems, with or without digital devices, present the solutions and evaluate if they are reasonable	do measurements on a building site and do calculations to check that the building is made according to plans and regulations
interpret and use expressions from daily and professional life	interpret expressions on how much weight a support beam can carry
solve problems concerning length, angle and volume	students need to plan work following a specification from a customer
use and explain congruency, scale and the Pythagorean theorem in calculations and practical work	use the Pythagorean theorem to do calculations for building a truss according to specifications

Source: Cedefop.

A further revision of national VET curricula was ratified in 2020 and implemented from 2021. Aiming for an overall strengthening of general education elements (including mathematics) a set of major changes are introduced. The first is that all subjects have core elements. For mathematics it is five:
(a) exploration and problem solving;
(b) modelling and applications;
(c) reasoning and argumentation;
(d) representation and communication;
(e) abstraction and generalisation.

The core elements represent important values and methods within mathematics. The second major change is that each VET programme is given an adapted curriculum. Looking at the new curriculum for mathematics for VET, it becomes evident that it shares its core elements with general education. Each programme has six learning outcomes in its curriculum. Three of the six are the same across all curricula, and the remaining three are tailored to the specific programme. The general learning outcomes concern personal finances and units of measurement:

'The student shall be able to assess choices related to personal finances and reflect on the consequences of taking out a loan and using a credit card'.

The learning outcomes for the specific programmes, here exemplified by construction and building, are made to be relevant for the programme.

'The student shall be able to read, use and make spreadsheets in the work with budget, tenders and cost calculations related to building and construction technology, and assess how different factors affect the result'.
'The student shall be able to collect data from the field of practice, make estimates and calculations and expediently illustrate the results and present them'.
'The student shall explore and use the properties of geometric forms, scale and trigonometry to calculate lengths, angles and areal when problem-solving in construction and building'.

This is intended to help teachers and schools in adapting the curriculum to the programmes. To ensure that the curricula could be used to assess the students, the project made a list of specific verbs to use in the learning outcomes. The list contains 16 verbs: analyse, apply, describe, use, document, discuss, understand, implement, plan, present, reflect, cooperate, interpret, explore, develop and evaluate. The list also helps the developers of the different curricula to maintain a consistent use of the verbs. The use of verbs is related to Bloom`s taxonomy. The description of how the verbs are to be interpreted will help make them easier to assess. There is still a lack of standards or minimum requirements. The learning outcomes are open and can be achieved at different difficulty levels. This leaves the schools and teachers a lot of room to adapt the curriculum to the student. At the same time, it does not ensure that all students meet a minimum requirement at the end of education, but the students will achieve a variety of different levels.

4.4. Comparative lessons

When comparing the three national approaches to curriculum development, we observe a striking difference regarding the use of learning outcomes. While the German and Norwegian approaches are centred on the ability of the student to (as exemplified by the Norwegian case above) 'read', 'use', 'make work', 'process', 'explain', 'assess' and 'reflect', the pre-2013 Greek curriculum, when applying learning outcomes, uses a narrower range of action verbs focusing on the ability to 'describe' knowledge. While the 2013 reform and the current

2020 law may change this in the future, the Greek approach is more oriented towards the teacher than the learner. The comparison of the three national cases illustrates that learning outcomes can be used in different ways and with different results. It also makes it clear that traditional advice regarding the definition of learning outcomes, focusing on measurability, objectivity and lack of ambiguity, are insufficient. The ability to describe the features of auto mechanics (as required by the Greek case) can be assessed and marked. It provides, however, a weaker basis for assessing a candidate's independent ability to detect problems and fix cars.

PART II.
Learning outcome: conceptual preconditions

This part of the handbook provides a more in-depth discussion of conceptual aspects related to the definition, writing and use of learning outcomes. Departing from a definition of the concept (Chapter 5), an effort is made to clarify some of the challenges involved in describing and capturing the complexity of learning (Chapter 6). This is followed up through an in-depth discussion of transversal skills and competences and how these can be represented in learning outcomes statements (Chapter 7). This part concludes with a presentation of criticism commonly raised towards the use of learning outcomes (Chapter 8).

CHAPTER 5

The definition of learning outcomes

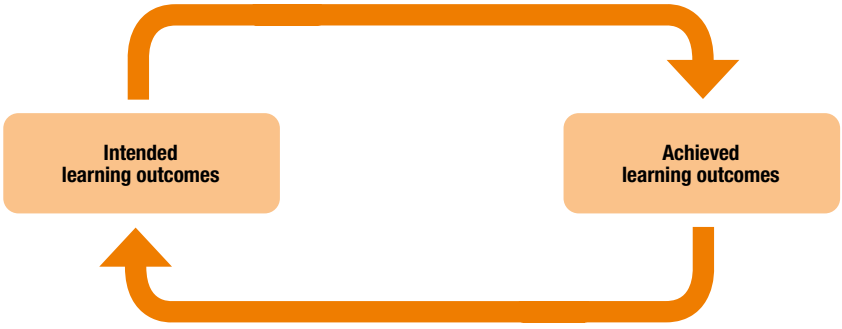
Throughout Europe, the term 'learning outcomes' is increasingly embedded in the vocabulary of education and training policies (Prøitz, 2014). There are two main, interrelated definitions of this concept:

(a) learning outcomes are 'knowledge, know-how, information, values, attitudes, skills and/or competences a person has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal or informal' (Cedefop, forthcoming);

(b) learning outcomes are 'statements regarding what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy' (Council of the European Union, 2017).

This relationship can be expressed as a loop where the interaction between what is intended and what has actually been achieved feeds into a continuous improvement process.

Figure 3. **Relationship between intended and achieved learning outcomes**



Source: Cedefop.

The definitions and descriptions of learning outcomes as used in qualifications frameworks, qualification standards and curricula are statements and expressions of intentions. They are not outcomes of learning, but desired targets. Achieved learning outcomes can only be identified following the learning process, through assessments and demonstration of achieved learning in real life, for example at work. Consistent application of learning outcomes requires continuous dialogue between intended and actual outcomes, seeking to improve stated expectations (intended learning outcomes) based on actually achieved outcomes. Dialogue between the world of education and work, and society at large, is crucial to successful implementation – and continuous review and renewal – of the learning outcomes approach (Cedefop, 2021). Table 11 details some of the most important differences between intended and achieved learning outcomes.

Table 11. **The relationship between intended and achieved learning outcomes**

Intended learning outcomes	Achieved learning outcomes
• are related to principles and concepts • might be observed: NQF descriptors, curricula, qualification descriptions, standards • have formal meaning • people involved in developing learning outcomes are defining their shape. Those people are specialists in writing learning outcomes in general. They include researchers, specialists from national/regional authorities for education	• are related to theory and practice • might be observed (or rather are the result of) training and assessment process • have practical meaning • people involved in developing learning outcomes are defining their content. Those people are specialists in defining and providing learning outcomes for a particular sector/ occupation. They include practitioners, education providers, social partners, sector representatives
Balance and comparability between intended and achieved is ensured when they are working together. In this way, flexibility and adaptability of learning outcomes as well as fulfilment of different aims of using learning outcomes is also ensured.	

Source: Cedefop.

5.1. Competence

The focus on actually achieved learning outcomes brings in the concept of competence, defined by Cedefop as the 'ability to apply learning outcomes adequately in a defined context (education, training, work or professional development)' (Cedefop, 2014, p. 47).

Competence can be understood as actually achieved learning outcomes, validated through the ability of the learner autonomously to apply knowledge and skills in practice, in society and at work. Learning outcomes are validated by their relationship to competences (Cedefop, 2012, p. 35). While the term competence is widely used throughout Europe, and in several countries substitutes for the term learning outcomes, there are many different definitions and interpretations, creating some confusion when operating internationally. The definition provided by the 2008 Recommendation on the EQF can be seen as a compromise, pointing towards a shared approach: 'Competence means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development' (European Parliament and Council of EU, 2008, p. 4).

When countries use the term competence-based qualification, they normally stress the role of the learning (and working) context and how this influences the transformation of intended into actually achieved learning outcomes. 'The learning or working context has a strong influence on the range of learning outcomes that are considered important, the interaction between them, the way the learner learns, how the outcomes are assessed and most importantly, the value attached to qualifications in the field. Competence-based qualifications thus state that a person is qualified to work in a specific field or occupation. The competence approach is closely associated with a view of individuals as (potential) parts of the labour force and a commitment to optimising the individual's efficiency in a job. In contrast, the term learning outcomes may also embrace general knowledge and ethical, cultural, and social skills that go beyond the needs of the labour market. Some types of learning outcomes may not be able to satisfy this requirement for contextual specification. For this reason, it is important to see the defining of learning outcomes as one key step towards defining competence-based qualifications. In other words, competence-based qualifications are one example of how learning outcomes-based approaches are used' (European Commission, 2011, pp. 12-13).

5.2. Learning aims and objectives

Related to the above concepts are terms such as learning aims and learning objectives. These are sometimes used interchangeably, potentially creating confusion. Kennedy et al. (2006, p. 5) understand learning aims and learning objectives in the following way: a learning aim is 'a broad statement of teaching intention, i.e. it indicates what the teacher intends to cover in a block of

learning. Aims are usually written from the teachers' point of view to indicate the general content and direction [of a programme]'. A learning objective is 'usually a specific statement of teaching intention, i.e. it indicates one of the specific areas that the teacher intends to cover in a block of learning' (Kennedy et al., 2006, p. 5).

The described move towards a more explicit, outcomes-based expression of learning is supported by many theoretical positions. Meyer (1997) offers a detailed insight into the evolution of this research and points out that the term learning objective dates back to the first half of the 20th century (Bobbit, 1918; Tyler, 1949) and is clearly oriented towards clarification of teachers' intentions. The term learning outcomes is introduced from the 1970s and onwards, signalling a more learner-centred approach. The distinction between objectives and outcomes can also be captured through the distinction between 'product' and 'process' models for curriculum development. Tyler (1949) presents one of the first rational curriculum design models, also known as 'means-end' or 'product' model. To some extent influenced by behaviourism (see also Chapter 4), the focus is very much on defining precise and observable results of teaching. Stenhouse (1975) questions whether curriculum and pedagogy could be oriented by logic other than the means-end model. He saw the model as not beginning with behavioural objectives but focusing on the learner, the learning process and the conditions of instruction and learning to be created.

This tension between 'product' and 'process' models and approaches still influences the debate on learning outcomes and their application. Part of the problem lies in the fact that this distinction is not always made clear to practitioners working with learning outcomes. While the topic is well covered in the research literature, much of the guidance material produced over the past few years fails to address this tension. The practical implication of this is that available options are not clearly communicated.

CHAPTER 6

Writing learning outcomes: how to capture progression in, and complexity of, learning?

Learning outcomes are best understood as an approach that can be adapted to and applied in different policy, teaching and learning settings. It follows that there is no single correct or apt way of approaching them. The term can have a range of connotations and denotations, precisely because it is used in different contexts (Cedefop, 2009). However, as alluded to in Chapter 4, the conceptual basis for the definition of learning outcomes can directly influence the character and quality of the learning process as experienced by the individual learner.

6.1. Learning outcomes and learning progression

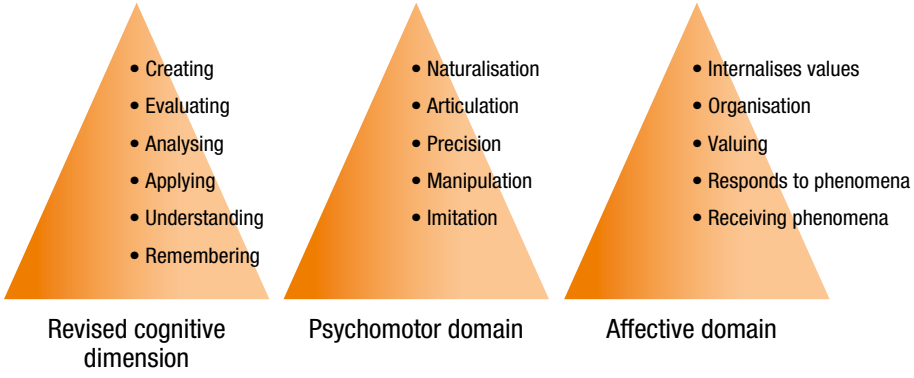
The EQF guidance note on using learning outcomes (European Commission, 2011, p. 8), states that the definition and writing of learning outcomes refers to taxonomies of learning based on a hierarchy of conceptual stages of learning processes that learning outcomes can be used to describe ([36]). In the world of employment, the processes to define occupational standards ([37]) are based on making explicit the components of a professional activity; these look similar to expected learning outcomes. The theory of communities of practice (Lave and Wenger, 1998), for example, requires clear understanding of what is to be learned and how it is best learned. When using this theory, cognition, personal growth and professional development will be supported by clear learning outcomes statements of what is expected of the workers/learners.

([36]) See Kolb and experiential reflection (Kolb, 1984); and constructivist theories first introduced by Vygotsky (zones of proximal development) (Vygotsky, 1978).

([37]) Such as functional analysis of jobs within occupations (Mansfield and Mitchell, 1996).

Bloom's taxonomy is one of the most important theoretical influences on thinking about learning outcomes and progression. The earliest iteration of the taxonomy (Bloom et al., 1956) sets out a hierarchical categorisation of cognitive learning, moving from basic (knowledge and comprehension) to increasingly complex skills (application, analysis, synthesis and evaluation of concepts, processes, procedures, and principles). Anderson et al. (2001) revised the cognitive domain of the taxonomy by changing the nouns used in the original version to verb form (knowledge was changed to remembering; comprehension to understanding) and placing synthesis (creating) above evaluation (evaluating) in the highest order of complexity. A second publication (Bloom et al., 1964) set out a hierarchy of learning for the affective domain, starting with the basic (receiving, responding) and moving to more complex levels (valuing, organisation, characterisation by a value or value complex). A further development introduced a hierarchy describing the psychomotor domain (skills), starting with imitation and moving via manipulation precision to articulation and naturalisation. The three hierarchies are shown in Figure 4.

Figure 4. **Bloom's taxonomy: cognitive, psychomotor and affective domains**



Source: Bloom et al. (1956); Dave (1970); Anderson et al. (2001).

This approach has been subject to various criticisms. Bereiter and Scardamalia argued that '… we need ways to think about knowledge that allow us to be reasonably clear and definite about what we are trying to achieve yet do not require reducing knowledge to itemisable objects in the mind …' (Bereiter and Scardamalia, 2005, pp. 12-13). Depth and coherence of knowledge in the development of expertise, they argue, requires '… getting beneath the surface,

making contact with the underlying patterns and principles that give meaning and support intelligent action' (Bereiter and Scardamalia, 2005, p. 10). The inclusion of increasingly complex verbs in three hierarchies, some of which are process-oriented, can possibly be seen to prevent such a reductionist bias in the application of learning outcomes, as illustrated by a range of taxonomies developed (partly) in response to Bloom.

6.2. Alternative taxonomies: potential impact on defining and writing learning outcomes

Two alternative learning outcomes taxonomies, with deeper roots in constructivist theories, have emerged in the past few decades. The first, the Dreyfus taxonomy, describes learner progression from 'novice to expert'.

Box 5. **From novice to expert**

- Novice learners have incomplete understanding and approach tasks mechanistically. Novice learners need supervision.
- Advanced beginners have a working understanding of concepts. They tend to see actions as a series of steps. Advanced beginners can complete simple tasks without supervision.
- Competent learners are able to understand context. They may complete work independently to an acceptable standard.
- Proficient learners have deeper understanding and are able to see actions holistically. They are consistently able to achieve a high standard.
- Expert learners have an authoritative, deep and holistic understanding. They are able to deal with routine matters 'intuitively', to go beyond existing interpretations. They consistently achieve excellence.

Source: Dreyfus, 1981; Dreyfus and Dreyfus, 1986.

An important research tradition has developed from this starting point, including work on 'situated learning' (Lave and Wenger, 1998). This demonstrates how the increasing complexity of learning is intrinsically linked to context and setting, where the individual learner moves from a peripheral to a more central and involved position in the relevant community of practice. This underlines the key role played by context in writing learning outcomes and stresses the initial comment in Chapter 2 that learning outcomes need to coexist with input factors, including the learning setting.

The SOLO (structure of observed learning outcomes) taxonomy (Biggs and Collis, 1982; Biggs, 1999; 2014) similarly describes progressively com-

plex levels of understanding. Within the SOLO taxonomy, understanding is described as an increase in the number and complexity of connections learners make as they progress from low to high levels of competence. Learning is shaped by prior knowledge, misconceptions, learning intentions and strategies. The focus is on depth and quality of understanding, rather than quantity of information.

Table 12. **The structure of observed learning outcomes (SOLO)**

Levels of understanding displayed	Phase of learning	Indicative verbs
Extended abstract: conceptualises at level extending beyond what has been dealt with in the actual teaching and learning process. Can generalise to new areas.	Qualitative phase	Theorise, generalise, hypothesise, reflect, generate.
Relational: indicates orchestration between facts and theory, action and purpose. Understanding of several components which are all integrated conceptually. Can apply the concept to familiar problems and work situations.		Compare, contrast, explain causes, integrate, analyse, relate, apply.
Multi-structural: indicates understanding of boundaries but not of systems. Understanding of several but discreet components. Disorganised collection of ideas or concepts around an issue. Not relating items in list.		Enumerate, classify, describe, list, combine, do algorithms.
Uni-structural: concrete, minimalistic understanding of an area, focuses on one conceptual issue in a complex case.		Identify, memorise, do simple procedure.
Pre-structural; no understanding demonstrated.	Quantitative phase	Misses the point.

Source: Adapted from Biggs (1999).

6.3. The behaviourist biases

There is tendency (e.g. Campbell, 2014), to argue against and oppose the shift to learning outcomes due to what is seen as a (negatively perceived) behaviouristic bias. According to this criticism, the learning outcomes approach risks reducing the richness of learning by imposing a simplistic stimulus-response paradigm of learning where only observable and measurable outcomes count. This, according to critics, assumes a linear and overly sim-

plistic learning process where complex activity verbs (such as understand) should be avoided and replaced by narrower, terms with clear borderlines. The distinction between 'strategic-instrumental' and 'communicative-deliberative' rationality (Eriksen, 1999) also captures this tension. A strategic-instrumental and/or behaviouristic approach sees learning outcomes as result-oriented, full-ended and measurable. A constructivist approach, emphasising the communicative-deliberative character of learning, calls attention to a need for learning outcomes to be open-ended, suggesting reduced measurability. Allais (2012; 2014), repeats this criticism with reference to the way knowledge is treated '[…]. as information that can be divided into little bits that can be selected and combined at will' (Allais, 2014, p. 39). She believes that this 'ignores the extent to which knowledge is organised in bodies of hierarchical conceptual relationships, the value of such knowledge' (Allais, 2014, p. 39) does not respect the conditions in which knowledge is acquired. Others (Dobbins, 2014) argue against the assumption that the shift to learning outcomes by default implies reductionism. Learning outcomes can, to the contrary, focus on a wide range of knowledge, skills and competences; while some of these may be behavioural in character (using a particular tool for a particular purpose), others imply more complex and ambiguous processes (linked to the critical evaluation of arguments supporting a policy decision) (Dobbins, 2014, p. 2).

Biggs (1999; 2014) pursues this point and states that, in the design of learning outcomes and assessment tasks, teachers are free to use open-ended verbs such as 'design', 'create', 'hypothesise', 'reflect' and so on; this is a way to avoid predetermined or rigid design of teaching and assessment. A key question is how to define and apply learning outcomes in ways which avoid the reductionism attributed to behaviourism. In parts of this handbook we warn against broad terms such as 'understand' and 'appreciate' and recommend, replacing them with terms such as 'describe', 'formulate', and 'identify'. Biggs argues against this advice, stating that, at an advanced level, appropriate verbs for learning outcomes would include 'hypothesise', 'reflect', and apply to unseen domains or problems. These higher order learning outcomes require open-ended tasks, allowing for emergent and unintended outcomes (Hussey and Smith, 2008). Following this, it can be argued that complex verbs such as 'understanding' will be at the core of most skills and activities; it forms part of the definitions of learning outcomes cited above. Learning outcomes can help learners to articulate what they will be doing about their understanding, and how this reflects different levels of understanding.

CHAPTER 7

Transversal skills and competences

The issues discussed in Chapters 5 and 6 comes to the fore when trying to capture transversal skills and competences through learning outcomes descriptions. These skills and competences are defined by Cedefop (forthcoming a) as 'Learned and proven abilities which are commonly seen as necessary or valuable for effective action in virtually any kind of work, learning or life activity'. Referred to by a wide variety of headlines like 'soft skills', 'key competences', '20th century skills' and 'socio-emotional skills', these are essential but also complex aspects of personal and professional development. In relation to the definition of assessment criteria (Chapter 3) we point out that transversal skills and competences can be understood as multidimensional constructs which require 'unpacking'. Writing learning outcomes aiming to promote 'team-work' or 'problem-solving' (for example) is getting much attention (see for example Cedefop forthcoming b) but raises important questions regarding the way we define and describe learning outcomes.

7.1. Unpacking transversal skills and competences

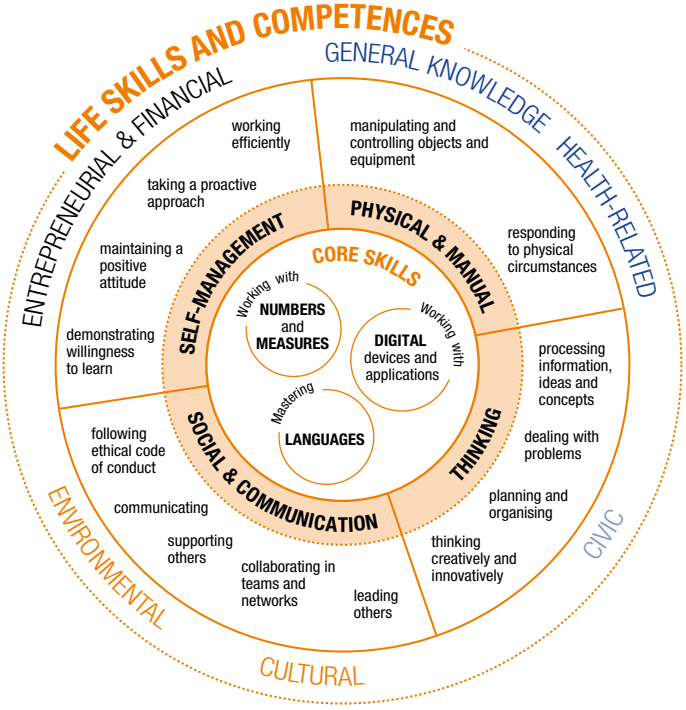
Two Member State advisory groups to the European Commission, for EQF and ESCO, jointly (2019) mandated the development of a multilingual ([38]) terminology on transversal skills and competences (TSC) ([39]). The result of this work, presented mid-2021 (Cedefop and European Commission, 2021), is of direct relevance to the definition, description and application of learning outcomes. The main elements of the proposal are the following. Focusing on three 'broad domains of competence' (cognitive, intrapersonal and interpersonal), the proposal covers both cognitive and non-cognitive skills and

([38]) In the 27 languages of ESCO.

([39]) Acknowledging that these skills and competences play an increasingly important role in national education and training systems, both groups pointed to the lack of terminology clarity in this area. This, it was stated, prevents efficient dialogue and cooperation.

competences. The model demonstrates the relationship between terms by moving from internal individual dispositions (thinking and self-reflection) to interactions with others and the outer world (social and communication and life skills). Based on this approach, the terminological model consists of six main TSC categories. These six categories cover and capture a wide range of TSCs, allowing users to identify and better understand the relationship between the different terms commonly used in this area. Building on this logic, the circles visualise the move from the internal to the external, from the core skills and competences defining the individual to the life skills and competences embedded in a broader social context. To allow users to drill down into the terminology, the six main TSC Categories have been disaggregated into a set of discrete clusters, supporting the allocation of single skills and competence concepts. The model facilitates the identification of relevant concepts and shows the relationship between them. Figure 5 illustrates the overall model proposed by the expert group.

Figure 5. **The transversal skills and competences model**



Source: European Commission and Cedefop, 2021.

This conceptual model now underpins the revised version of ESCO (version 1.1) published 10 February 2022.

7.2. Implications for learning outcomes

The terminological model on transversal skills and competences provides an important reference point for those defining and writing learning outcomes. While priorities regarding technical and occupational skills need to be decided in a dialogue with end-users in the labour market and elsewhere, the inclusion of transversal skills and competences requires additional support. The ESCO/EQF terminological framework is designed as a resource, in 27 languages, supporting stakeholders and experts in setting learning-outcomes-based priorities. This resource supports the definition and description of learning outcomes by:

(a) providing a comprehensive overview over the most commonly used transversal skills and competence terms;
(b) illustrating the relationship between existing terms;
(c) using a learning-outcomes-based approach at all levels of the terminological framework;
(d) Including an extensive and integrated list of action verbs to consider for use.

While it is up to the stakeholders and experts involved to set the priorities and make final choices, the model identifies relevant areas to consider and supports the choice of relevant terms. The approach can be illustrated with reference to the categories self-management and social-communication skills and competences.

7.2.1. **Self-management**

Self-management skills allow the individual to reflect on and make best use of his/her own abilities and potential. With reference to existing approaches in this area, the following four clusters are identified:

(a) working efficiently;
(b) taking a proactive approach;
(c) maintaining a positive attitude;
(d) demonstrating willingness to learn.

The associated single concepts, all formulated as learning outcomes, illustrate the orientation of these clusters.

Working efficiently	Taking a proactive approach
• Act independently • Manage time • Meet commitments • Manage quality • Attend to detail	• Show initiative • Make decisions • Assume responsibility • Show commitment • Show determination • Manage personal progression
Maintaining a positive attitude	**Demonstrating willingness to learn**
• Cope with uncertainty • Manage frustration • Cope with stress	• Adapt to change • Keep an open mind • Accept criticism and guidance • Exercise self-reflection • Demonstrate curiosity

7.2.2. Social and communication skills and competences

Social and communication skills and competences allow the individual to interact with other people. With reference to existing approaches in this area, the following five clusters for social and communication skills and competences have been identified:

(a) communicating;
(b) supporting others;
(c) collaborating in teams and networks;
(d) leading others;
(e) following ethical code of conduct.

The associated single concepts listed in the following illustrate the orientation of this category.

Communicating

- Moderate discussions
- Resolve conflict
- Negotiate
- Promote ideas, products, services
- Report

Supporting others

- Show empathy
- Ensure customer orientation
- Couch, mentor or advise others
- Teach, train or instruct others

Collaborating in teams and networks

- Interact with others
- Build and maintain networks
- Work in teams
- Demonstrate intercultural competence

Leading others

- Delegate responsibilities
- Motivate others
- Build team spirit

Following ethical code of conduct

- Comply with regulations
- Respect confidentiality obligations
- Demonstrate loyalty
- Demonstrate trustworthiness

7.3. The future role of ESCO

Transversal skills and competences point to the general need for learning outcomes statements to be able, when needed, to balance between general knowledge, occupationally specific and transversal skills and competences. The updated ESCO terminological tool provides important terminological support, in 27 languages, to this balancing act. In addition to the terminology on transversal skills and competences outlined in this chapter, ESCO now provides a dictionary of more than 13 000 occupationally related skills and competences covering close to 3 000 occupations. ESCO will not be the tool for setting priorities and for balancing learning outcomes, but it does provide an important resource supporting this process.

CHAPTER 8

Questioning the added value of learning outcomes

Not everybody agrees with the added value of learning outcomes. Several researchers have criticised the conceptual basis of the approach and questioned its practical and political implications. We can distinguish two main lines of criticism; a conceptual and (partly) ideological; and a technical and practical. While the first line of criticism tends to argue against the approach as a whole, the second is more pragmatic and points to weaknesses in its current understanding and application. This chapter cannot give a full overview of research in this area but seeks to identify the most important issues currently addressed and debated.

8.1. 'Dumbing down' of education and training

Allais (2014) stands out as a vocal representative of conceptual and (partly) ideological criticism ([40]). Based mainly on experiences from South Africa and the UK, she questions the added value of learning outcomes, arguing that they can potentially undermine the development of high-quality education and learning. Focusing mainly on the (perceived failed) role of qualifications frameworks in these countries, her contributions connect to a research tradition arguing that the shift to learning outcomes can inhibit and restrict the learning process and 'dumb down' teaching and assessment. The learning process, which is always context-bound, can be harmed by introducing too concrete and specific outcome statements. The focus on observable and assessable outcomes, it is argued, links back to a behaviouristic tradition seeking to reduce complex (personal and social) learning processes into measurable and delimited objects. This tradition according to Allais, assumes the learner to be passive and (exclusively) responding to environmental stimuli (Schuman and

([40]) O'Brien and Brancaleone (2011, p. 8) discuss the epistemological and pedagogical validity of learning outcomes approach, pointing to the gap between conceptual origins and intended action.

Ritchie, 1996). Focusing on the 'conditioning' and 'reinforcement' of individuals, attention is given to the external change in behaviour. Critics point out that this perspective has profound implications as it requires outcomes to be described in specified, unambiguous, quantifiable, full-ended and measurable terms. The approach is seen as fundamentally clashing with liberal traditions, notably in higher education, which emphasise the open character of learning (as a condition for research and innovation). The criticism of learning outcomes has grown stronger as the approach has gained more political support across Europe. Seen by some as the embodiment of a neo-liberalist, market-driven philosophy, the shift to learning outcomes, as exemplified by the rapid growth in national qualifications frameworks, is seen as 'policy hype' and as a threat to high quality education and training. Not questioning the overall relevance and usefulness of learning outcomes, several researchers (Meyer, 1997; Biggs, 1999) have raised questions regarding particular aspects of the approach. While addressing some of the same issues as listed above, these contributions seek to identify ways in which to improve existing practices.

8.2. Addressing imperfections of learning outcomes

It can be argued that learning outcomes can inhibit the learning process, for example when indicating (too) restricted a threshold level. Too much specificity and detail, it is argued, also makes it difficult to leave room for innovation and exploit the unexpected present in any situation. Researchers influenced by constructivism (e.g. Hoskins and Deakin Crick, 2010, p. 122) have made an effort to establish an alternative based on an understanding of learning as deeply contextualised and not to be separated from social identity, values and relationships. It puts the learner at the centre of the learning process, as an active constructor of knowledge and not just a passive receiver, who not only 'assimilates' but also 'accommodates' knowledge, skills and competences based on previous experiences, mental structures and beliefs. According to this school of thought, knowledge, skills and competences cannot be treated as isolated or decontextualised entities and/or subjects, but need to be addressed in the context where they are situated (Lave and Wenger, 1991). The implication of this for defining and applying the learning outcomes approach is that learning outcomes statements are descriptive (not prescriptive), holistic and defined from a perspective of an individual and his/her abilities (Cedefop, 2010; Anthony, 1996). They are process and context-oriented and need to

avoid a too rigid definition of outcomes. This open-ended approach respects individual diversity and the inherent richness of learning processes, but risks reduced measurability (Prøitz, 2014).

One strand of research (Biggs, 1999; Biggs and Tang, 2007) stresses the importance of aligning learning outcomes statements to teaching and learning practices as well as to assessment tasks. The potential impact of the learning outcomes approach depends on this alignment, or as Biggs and Tang express it: 'the alignment in constructive alignment reflects the fact that the learning activity in the intended outcomes, expressed as a verb, needs to be activated in the teaching/learning process if the outcome is to be achieved and in the assessment task to verify that the outcome has been achieved' (Biggs and Tang, 2007, p. 52). This approach requires that learning outcomes be treated as open-ended: 'Unlike some outcomes-based education, constructively aligned teaching is not a closed loop, focusing only on what is predetermined. We use outcome statements and open-ended assessments tasks that allow for unintended but desirable outcomes' (Biggs and Tang, 2007, p. 53).

PART III.
Rules of thumb

This third and final part of the handbook presents some basic steps, rules of thumb, to be considered when defining and writing learning outcomes (Chapter 9). Covering the stages from definition and writing to application in teaching and assessment, these rules of thumb provide a reference point for those working with learning outcomes for different purposes. They are illustrated by examples, showing how the approach is being used in practice. This part also addresses how learning outcomes can support European cooperation in education and training: common principles for presenting learning outcomes, to be used for transparency and comparability purposes are outlined.

CHAPTER 9

Rules of thumb in defining and writing learning outcomes

While learning outcomes promote overall transparency and help to clarify the intentions of learning processes, they do not replace considerations of what are the most accurate inputs to the learning process. Learning outcomes should not be used in isolation but complement and add value to existing input-oriented perspectives.

9.1. The fundamentals

Using learning outcomes represents a perspective and a mode of thinking. The focus is always on the learner and what he/she is expected to know, be able to do and understand.

(a) When writing learning outcomes, the learner is always – irrespective of the purpose and level of detail – put at the centre.

(b) Intentional and (actually) achieved learning outcomes are distinguished. The former are statements of intentions and expectations, the latter can only be identified following the learning process, through assessment and demonstration of achieved learning in real life, for example at work.

(c) Improving the way learning outcomes are defined, described and used requires continuous dialogue (the feedback loop) between intended and actual outcomes. The experiences from actually achieved outcomes should be used systematically to improve statements of intentions, as for example found in curricula.

(d) Learning outcomes help to clarify intentions and provide a reference point for judging learning achievements. Not all learning, however, can be fully defined in learning outcomes. The learning process can rarely be fully predicted and described; it has intended as well as unintended, desirable as well as undesirable outcomes.

(e) Learning outcomes must remain open to the explorative and to what has yet to be experienced and articulated.

(f) learning outcomes never operate in isolation but must be defined and

written within a broader context where learning inputs are considered. The balance between learning outcomes and other aspects depends on the context in question and purposes addressed.

(g) It is important to avoid copying (cut and paste) learning outcomes from elsewhere. While it will be important to consult experiences from others throughout the process, learning outcome statements should be authentic and reflect the context being addressed. Defining and writing learning outcomes should normally start from 'a blank sheet of paper', evolve as an iterative process, and involve all stakeholders/team members.

Writing learning outcomes is not a neutral activity but requires reflection on the purposes addressed, the interests involved and the implications of available alternatives.

(h) Learning outcomes are written for different purposes. The descriptors used for a national qualifications framework differ significantly in detail and specificity from those used in a national curriculum, a qualification standard, a programme description, or an assessment standard. Learning outcomes must be 'fit for purpose' and the level of detail/granularity and generality/specificity must reflect this.

(i) While written for different purposes and varying in detail, learning-outcomes-based frameworks, qualifications standards and profiles, curricula and assessment criteria should be related and mutually inform each other.

(j) Learning outcomes will be written in ways which reflect different interests. While some employers could give priority to tangible outcomes to be applied in an occupational context, a national ministry of education may have to give priority to broader learning outcomes, preparing learners for a broad range of work and education opportunities and challenges.

(k) Learning-outcomes-based approaches have different origins and have been influenced by different schools of thought. It is possible to observe a tension between what can be described as behaviouristic and constructivist schools of thought (Cedefop, 2016).

(l) While some traditions will emphasise learning outcomes as result-oriented, full-ended, clearly observable and (objectively) measurable, others will emphasise the need for learning outcomes to be process-oriented and open-ended, limiting measurability.

The relevance of learning outcomes statements to individual learners and other users depends on their ability to specify and balance general knowledge subjects with occupation-specific skills and transversal competences.

(m) The balancing of general subjects, occupational skills and transversal competences needs to be decided in a dialogue between relevant stakeholders, reflecting the purpose of the intervention.
(n) Using learning outcomes to set priorities is not a neutral process, but it needs to be supported by a good technical understanding of the strengths and weaknesses of the approach.
(o) Learning outcomes need to be defined and written in a way which allows for individual and local adaptation and interpretation. Learning outcomes should support alternative learning pathways and choices, reflecting differences between individuals and the contexts in which they learn. While learning outcomes provide an important orientation for learners and institutions, they do not aim fully to predict and control the learning process.
(p) Too detailed and prescriptive statements can undermine and lead to a 'dumbing down' of learning and assessment. There is a need to balance regulation and autonomy.
(q) We need to be careful about treating outcomes of learning as information bits that can be selected and combined at will. This can ignore the extent to which knowledge, skills and competence are related and interdependent, and lead to neglect of the conditions in which they are acquired.
(r) While learning outcomes statements are written for different purposes, relationship should be sought between the learning outcomes written for qualifications frameworks, national curricula, programme curricula, qualifications standards, and assessment specifications.
(s) National qualifications frameworks, defining levels of learning outcomes, can be used as reference points, aiding consistent interpretation and application of learning outcomes (calibration).
(t) National qualifications frameworks provide a reference point for defining and writing learning outcomes. The role of the level descriptors in a framework is to identify the 'centre of gravity' of the programme or qualification, not rigidly force all statements to comply with one particular NQF level or descriptor domain.

While learning outcomes represent a mode of thinking directly benefitting learners, this perspective is normally combined with what we can term an input-based approach.

(u) Teaching specifications can be supplemented by outcome information.
(v) Learning-outcomes-based qualifications can be structured around inputs (such as duration, methodology).
(w) Assessments can use both input and outcome criteria.

9.2. Definition and writing

Simplicity is important when writing learning outcomes. Too much detail and overly complex statements prevent learners, teachers and assessors from relating to the statements.

(a) Defining and writing learning outcomes should be treated as an iterative process, starting from overall objectives and moving stepwise towards specific statements for units and assessment. Having arrived at specific statements, overall objectives could be reviewed and changed. Soulsby (2009) describes this iterative process as designing backwards (from broad institutional objectives to specific assessment criteria) and delivering forwards (using experiences from teaching learning and assessment to orient and reorient broader institutional objectives).

(b) When writing learning outcomes to orient a qualification/programme or a qualification unit/course, the number of statements used should be carefully considered. When defining a course or unit it is generally recommended to limit the number of statements.

(c) When defining and writing learning outcomes for a full qualification or a programme it is generally recommended to keep the number of statements as few as possible. The purpose should be to identify the overall scope and profile, not to list all technical details.

(d) Limiting the number of statements makes it easier for the learner to relate to the intentions and engage in the learning. It also makes it easier to plan teaching, to facilitate learning and, eventually, to carry out assessments.

(e) When writing a learning outcomes statement, it is recommended to focus on the learner and start with an action verb, followed by the object of the verb as well as a statement specifying the depth/breadth of learning to be demonstrated, and complete with an indication of the context (which can be related to learning, work or other relevant social contexts).

(f) In general, there should not be more than one action verb for each learning outcome. Table 13 illustrates this.

Table 13. **The basic structure of learning outcomes statements**

The basic structure of learning outcomes statements should:			
• address the learner	• use an action verb to signal the level of learning expected.	• indicate the object and scope (the depth and breadth) of the expected learning.	• clarify the occupational and/or social context in which the qualification is relevant.
Examples			
The student…	• is expected to present …	• …in writing the results of the risk analysis	• …allowing others to follow the process replicate the results.
The learner…	• is expected to distinguish between…	• …the environmental effects…	• …of cooling gases used in refrigeration systems.

Source: Cedefop.

9.3. The vertical dimension of learning outcomes statements

Learning outcomes statements need to capture the depth and complexity of learning. Addressing the depth of learning requires agreeing on the criteria for levelling and complexity. Some rules of thumb can be identified.

(a) Learning outcomes statements, combining action verb/object/context, need to be articulated along vertical and horizontal dimensions. Introducing the vertical dimension of learning outcomes statements is about indicating the level and complexity of learning. This will normally require referring to a hierarchy (implicit or explicit) of intended learning outcomes and achievements. The EQF exemplifies such a hierarchy, illustrated by the columns in Table 14.

Table 14. **Exemplifying the vertical dimension of learning outcomes: the increasing complexity of autonomy and responsibility (EQF descriptors)**

	The learner	The action	The object	The context
EQF level 3	Learner is expected…	• to take responsibility for	• completion of tasks in work or study	adapting own behaviour to circumstances in solving problems
EQF level 4	Learner is expected…	• to exercise self-management • to supervise • take some responsibility • evaluate and improve	• routine work of others • work or study activities	within the guidelines of work or study contexts that are usually predictable, but are subject to change
EQF level 5	Learner is expected…	• to exercise management, supervise, review • develop	• performance of self and others	in contexts of work or study activities where there is unpredictable change

Source: European Parliament; Council of the EU (2008).

(b) Learning-outcomes-based qualifications frameworks, as illustrated in Table 14, shift the focus from a (traditional) levelling based on institutional categories (and preconceived notions of institutional hierarchies) to a levelling based on intended and expected knowledge, skills and competence. This means, for example, that vocational qualifications in principle can be awarded at all levels, including level 8 of the EQF.

(c) The learning-outcomes-based levels can be used as a yardstick to ensure consistency across institutions and programmes. Are, for example, bachelor-qualifications delivered by different institutions pitched at the same level or not?

(d) The EQF descriptors illustrate how growing complexity can be expressed through the interaction between action verbs and a specification of object and context. Qualifications framework descriptors are written as generic statements to fit a wide range of institutions, qualifications and programmes. While valuable for identifying broad 'level corridors', learning outcomes statements written for other purposes need to be more specific.

(e) Action verbs play a key role in defining and articulating this vertical dimension but need to be supported in this by clarifying the object of learning and the occupational and/or social context in which the learning takes place and where the outcomes are to be used. The same action verbs could appear in different EQF levels (e.g. evaluate a document related to

your work (EQF level 1) and evaluate the theory and research evidence related to psychology (EQF level 6)) so the object and the context matter.

(f) Writing precise learning outcomes requires that ambiguous verbs be avoided. Verbs in Table 15 exemplify the differences between ambiguous and less ambiguous.

Table 15. **Ambiguous and precise verbs**

Ambiguous		Precise	
• Know • Understand • Enjoy • Determine • Appreciate	• Grasp the significance of • Become familiar with • Believe • Be aware of • Comprehend	• Distinguish between • Differentiate • Assemble • Adjust • Identify • Solve	• Write • Recite • Construct • Contrast • Compare • List

Source: Cedefop.

(g) What counts as an ambiguous verb, however, differs according to school of thought. A 'constructivist' approach to the definition and writing of learning outcomes (e.g. Biggs and Tang, 2007) will emphasise the need for them to be process-oriented and open-ended as opposed to being objectively measurable and observable. Table 16 shows the practical implications of operating with ambiguous action verbs.

Table 16. **The issue of ambiguity**

	The learner	The action	The object	The context
Creating ambiguity	The learner is expected to	• understand • be aware of	• the tools and methods • problems related to tools and methods	applied in CNC milling
Reducing ambiguity	The learner should	• be able to describe	• the basic principles	applied in CNC milling
		• be able to solve	• a problem related to tools and methods	

Source: Cedefop.

The issue of ambiguity is also illustrated in Table 17. Here we can observe an effort to replace ambiguous statements with more precise statements, clarifying the intentions underpinning teaching, learning and assessment:

Table 17. **Before and after examples of course learning outcomes**

Broad and ambiguous	**Direct and achievable** By the end of the semester, successful students will be able to:
Students will become familiar with plant and animal species in southern Ontario (Comment: level of achievement/ sophistication expected unclear)	Identify and describe 15 common plant and animal species found in the Carolinian Forest Region through field study and the development of an identification guide.
Students will critique works of art (Comment: additional detail required)	Critique contemporary works of art based on an appropriate set of criteria through studio critiques and an independent essay.
Students will be taught various decision-making models (Comment: teacher-centred, level of sophistication expected unclear)	Apply appropriate decision-making models in business and marketing through participation in a collaborative group project.
Students will appreciate the ethical responsibilities of social scientists (Comment: too broad, unclear how this can be measured)	Assess the ethical implications of research in the social sciences through in-class discussion and an independent written report.
Students will learn about research proposals (Comment: ambiguous, level of sophistication expected unclear)	Develop and present a research proposal (including appropriate research methods and a review of literature) on a relevant topic in primary or secondary education, through an independent presentation and written report.

Source: Kenny, 2013.

(h) A good way to distinguish between the different categories of verbs is to reflect on the difference between declarative knowledge (knowing what) and procedural knowledge (knowing how). Declarative knowledge is about recalling and representing theories and facts. Procedural knowledge requires that facts and theories be turned into use in increasingly complex occupational and social settings. The comparison of German, Greek and Norwegian national curricula in Chapter 4 illustrates the relevance of this distinction, underlining the important difference between reproducing knowledge and applying skills and competences in real life. Verbs must be able to indicate the relational character of knowledge and skills, between theory and practice, pointing to the growing complexity of the context in which the learner has to operate.

Table 18. **Declarative and procedural verbs**

Declarative verbs	Procedural/relational verbs
• repeat • describe • identify • memorise • recall	• reflect • hypothesise • solve unseen problems • generate new alternatives

Source: Cedefop.

9.4. The horizontal dimension of learning outcomes statements

The horizontal dimension of learning outcomes statements relates to the scope and breadth of the intended learning, notably in specifying the borderlines of the learning domains being addressed. Are we, for example, focusing mainly on theoretical knowledge or are we addressing practical or analytical skills? What part of an occupational area are we addressing? Are we focusing entirely on isolated tasks or are we also addressing the broader context of these tasks? Should a trainee brick-layer only learn to put brick on brick, or should he/she also learn the complexities of cooperation at a building site? These are all critical questions when defining the borderlines of a domain.

(a) Action verbs play a role when describing the horizontal dimension but need to be supported by clarification of the learning domains to be addressed. These domains are sometimes inspired by taxonomies like the one developed by Bloom but are frequently adapted to national and institutional needs. The introduction of qualifications frameworks inspired by the EQF has led to the adoption of nationally specific learning domains in almost all European countries.

(b) Learning outcomes will always, implicitly and explicitly, relate to domains, setting the borders of area where learning will take place. These domains, and their borders, can rarely be taken for granted but have to be analytically and empirically clarified and defined. Generic references, like those suggested by Bloom and those in qualifications frameworks, play a role in defining domains. Table 19 illustrates, with reference to Bloom's generic categories, how action verbs are used to support the definition of domains.

Table 19. **Domains of learning, with example levels of sophistication and common verb associations**

Domain of learning	Levels of sophistication	Common verb associations
Cognitive (knowledge) What will students know?	Remembering, understanding, applying, analysing, evaluating, creating	Define, identify, describe, differentiate, explain, apply, analyse, resolve, justify, recommend, judge, create, design
Psychomotor (skills) What will students be able to do?	Imitation, manipulation, precision, articulation, naturalisation	Adapt, arrange, build, calibrate, construct, design, deliver, demonstrate, display, dissect, fix, mimic, operate, sketch, use, perform
Affective (attitudes, values or habits of mind) What will students value or care about?	Receive, respond, value, organise, characterise	Ask, challenge, demonstrate, discuss, dispute, follow, justify, integrate, practise, judge, question, resolve, synthesise

Sources: Marzano and Kendall (2007); Kennedy et al. (2006); Anderson et al. (2001); Bloom et al. (1956; 1964).

(c) While the knowledge and skills domains (cognitive and psychomotor) can be identified (explicitly and implicitly) in almost all national qualifications frameworks, with implications for national curricula and qualifications standards referring to these, less agreement exists for the third domain. Although almost directly applied in some countries, most now focus on personal or social competences as a third domain, emphasising autonomy and responsibility (in a study or work context). The reluctance to use the affective dimension reflects that these are personal attitudes and values, partly belonging to a private sphere, and are not always the responsibility of formal teaching and learning.

Table 20 shows how autonomy is reflected in the Irish qualifications framework.

Table 20. **Irish national qualifications framework**

NFQ 5 (EQF 4)	NFQ 6 (EQF 5)
Learning outcomes at this level include a broad range of skills that require some theoretical understanding. Learners are enabled to work independently while subject to general direction.	Learning outcomes at this level include a comprehensive range of skills which may be vocationally specific and/or of a general supervisory nature and require detailed theoretical understanding. Modules include advanced vocational/ occupational skills, enabling certificate holders to work independently or progress to higher education and training.

Source: The Irish national qualifications framework; Irish NQF level descriptors.

(d) Qualifications frameworks increasingly influence the definition of domains. Table 21 shows the approach chosen by the German qualifications framework when differentiating between domains.

Table 21. **Exemplifying the horizontal dimension: German qualifications framework**

Professional competence		Personal competence	
Knowledge	Skills	Social competence	Autonomy

(e) In some countries, the predefined domains used in qualifications frameworks directly inform the writing of learning outcomes for qualifications. This is illustrated by the Belgian-Flemish qualification in Table 22.

Table 22. **Exemplifying the horizontal dimension: domains informing Flemish vocational qualifications**

Cognitive skills	Problem solving skills	Motoric skills	Context (external and activity contexts)	Autonomy	Responsibility

Another example comes from Ireland, where levels describe nationally agreed standards of learning in terms of three strands and eight sub-strands of expected learning outcomes: knowledge (breadth and kind), know-how and skills (range and selectivity) and competence (context, role, learning to learn, and insight). Knowledge, skills and competences are defined following a constructivist approach.

Table 23. **Main NQF level descriptor elements in Ireland**

Level descriptor elements		
Knowledge	**Know-how and skills**	**Competence**
• breadth • kind	• range • selectivity	• context • role • learning to learn • insight

Source: Cedefop, 2018.

Many countries do not use such predefined domains when writing learning outcomes for qualifications or modules. Sometimes described as a 'holistic' approach, these descriptions evolve from the task at hand, although frequently making implicit references to domains (notably knowledge and skills).

(f) Parts of the guidance and research literature (e.g. Biggs and Tang, 2007; Soulsby, 2009) explicitly warn against using predefined domains when describing programmes and courses, as these are hard to address and replicate in teaching, learning and assessment. Too rigid application of predefined domains could create artificial distinctions not found in real life. But, as illustrated in the comparison of German, Greek and Norwegian national curricula, borderlines will always have to be drawn and the key question is whether the implications, for the learner and teachers, are clearly understood by all involved.

(g) In VET and professional education, domains are frequently defined with reference to occupational classifications like ISCO and NACE. Rapid changes in occupational structures may, however, reduce the relevance of these classifications. Terminological tools like ESCO and O*Net (as illustrated in Chapter 5) provide a basis for defining borderlines in more detail and with more precision.

(h) The application of 'learning fields' in German national curricula is of particular relevance to defining domains. While providing borderlines between occupations and functions within/between occupations, the combination and interrelation of learning fields provide an overall orientation for the learner and teachers and instructors involved. Table 24 illustrates the learning field approach and the way it uses learning outcomes.

Table 24. **The application of learning fields in German national curricula**

Part IV and V: Occupation-related preliminary remarks and learning fields (Teil V: Lernfelder)	
Retail	**E-commerce**
Learning field 7: Accepting, storing and maintaining goods	Learning field 7: Implementing and evaluating online-marketing measures
The learner (is expected to) ... action verb (list of verbs) ([41]) • examine the incoming goods and take care of proper storage. • detect duty infringements through the supplier, document them and initiate appropriate measures for their removal. • communicate in a solution-oriented manner with suppliers. • control the goods based on receipts and record the items with the use of an information technology system as well. • store goods and follow significant storage principles in the sales and/or reserve warehouse • analyse key figures, carry out stock calculations, evaluate them and demonstrate optimisation opportunities • when handling packaging, take into account financial, legal and ecological aspects.	The learner (is expected to) ... action verb (list of verbs) ([42]) • plan an online marketing strategy, put online marketing measures into practice and evaluate the outcomes • analyse the target groups and the current marketing measures of the company • conduct given actions for the online marketing field led by the marketing goals • discover the competitors' marketing measures for comparison of the companies • analyse customer and user behaviour in the online-sales channel through the evaluation of data available from analysis programmes • examine the behaviour and attitudes of the target group and use the results of market research • determine online marketing goals and define target goals. • select target group-related and product-related online marketing measures for the customers and include current developments in online marketing when selecting appropriate measures • weigh up the chances and the risks of different forms of online communication with potential as well as existing customers • create an action plan for the implementation of the online marketing strategy and comply with budget guidelines • formulate advertising messages that are appropriate for the target group, also in a foreign language, and adapt them to the requirements of the online marketing measures.

Source: Adapted from Kaufmann / Kauffrau im Einzelhandel: Rahmenlehrplan, Learning field 7, p.14 and Kaufmann im E-Commerce, Learning field 7, p.16.

([41]) This section is based on a representative comparison of learning outcomes statements of learning field 7 (Kaufmann im E-Commerce, Learning field 7, p.16).

([42]) This section is based on a representative comparison of learning outcomes statements of learning field 7 (Kaufmann/Kauffrau im Einzelhandel: Rahmenlehrplan, Learning field 7, p.14).

9.5. Using learning outcomes statements to support learning and assessment

Intended learning outcomes can only be made visible as actually achieved learning outcomes following assessment and/or through demonstration of achieved learning.

(a) When writing learning outcomes for a programme or a course – and the associated qualifications and qualification units – the effort ([43]) required by the learner should be considered. Learning outcomes statements can easily be (and are frequently) overloaded and lose their relevance as tools supporting the learning process.

(b) Given that learning outcomes provide a reference point for formative/summative assessment and (increasingly) the validation of non-formal and informal learning, focus should be on individual achievements, not on the teacher's methods and approaches.

(c) Consistent application of learning outcomes requires continuous dialogue between intended and actual outcomes, seeking to improve stated expectations (intended learning outcomes) based on the actually achieved outcomes.

(d) Involve all relevant stakeholders in the development and review of learning outcomes, teachers and trainers as well as relevant external stakeholders. Learning outcomes need to be a 'living thing' and continuously reviewed and improved.

9.5.1. **Aligning learning outcomes to teaching and learning**

The application of learning outcomes is a question of aligning learning outcomes statements with teaching and learning. The statements should assist teachers in identifying and combining teaching methods.

(a) Teachers should be involved in the definition and writing of learning outcomes to advise on the level of prescription/openness. Flexible delivery to reach outcomes is needed, as well as professional autonomy for teachers. Extensive collaboration among teachers from different fields can make positive contributions to flexible learning pathways: teachers need to be prepared for this cultural change.

([43]) In formal education and training (classroom) settings, available learning time is limited and specified. This needs to be reflected by the learning outcomes statements. When gaining a qualification through validation of non-formal and informal learning, in contrast, this time limitation/specification is less relevant. The term 'notional time' can be used to indicate an abstract measure of required effort, but at the same time acknowledge that learners follow different pathways and therefore accomplish learning at different speeds.

(b) According to Biggs (2003), the teacher's job is to create a learning environment that supports the learning activities appropriate to achieving the desired learning outcomes. The key is that all components in the teaching and learning system – the curriculum and its intended learning outcomes, the teaching methods used, the resources to support learning, and the assessment tasks and criteria for evaluating learning – are aligned to each other and support achieving the intended learning outcomes.
(c) Aligning learning outcomes to teaching and learning is about connecting the abstract idea of a learning outcome to what teachers actually do to help students learn, and the things that students do to learn. The outcomes approach requires teachers to pose and answer the questions:
    (v) what do I intend students to learn (what learning outcomes do I want them to achieve)?
    (vi) what teaching methods and curriculum design can be used to encourage students to behave in ways that are likely to achieve these outcomes?
    (vii) what assessment tasks and criteria will tell me that students have achieved the outcomes I intend?
    (viii) how can formative and summative assessment be combined to support the learning process and to clarify whether outcomes have been achieved?
(d) Biggs (2003) identifies the main steps in alignment: defining the intended learning outcomes; choosing teaching/learning activities likely to lead to, help and encourage students to attain these intended learning outcomes; engaging students in these learning activities through the teaching process; assessing what students have learned using methods that enable students to demonstrate the intended learning and, in the case of formative assessment, giving feedback to help students improve their learning. Then comes evaluating how well students match learning intentions and, from this, setting grades and/or awarding qualification.
(e) Implementing learning outcomes depends on a clear link being established between the learning outcomes statements and the learning and teaching process. This requires that learning outcomes statements for different purposes (qualifications standards, programme profiles and curricula) be related to each other and do not operate as isolated and separated elements.

9.5.2. **Learning outcomes and assessment**

The application of learning outcomes is also a question of aligning statements

with assessment. Ramsden (1992) states that for students 'the assessment is the curriculum'. By this he means that students will learn what they think they will be assessed on, not necessarily what the learning outcomes in the programme or curriculum state. The trick, according to Biggs (2003), is to make sure the assessment tasks mirror the learning outcomes. Table 25 illustrates how this alignment to teaching/learning and assessment can be understood.

Table 25. **Alignment of teaching/learning and assessment to intended learning outcomes**

Teaching/learning	Intended learning outcomes	Assessment tasks
Designed to generate or elicit desired verbs in large classes, small classes, groups or individual activities. Such activities may be: • teacher-managed; • peer-managed; • self-managed. As best it suits the ILO	Incorporate verbs that students have to enact as appropriate to the context The very best outcomes that could reasonably be expected containing verbs such as hypothesise, reflect, apply, relate to principle, etc. Highly satisfactorily outcomes containing phrases such as solve expected problems, explain complex ideas, apply to professional practice Quite satisfactory outcomes containing phrases such as solve basic problems, explain basic ideas and use standard procedures Minimally acceptable outcomes and applications; inadequate but salvageable higher-level attempt	Format of tasks such that the target verbs are elicited and deployed in context Criteria specified clearly to allow judgement of student's performance

Source: Biggs and Tang, 2007.

(a) The classification of learning outcomes statements into domains is of critical importance to assessment (Section 9.4). Clear borderlines are important for the learner as well as the assessor. Setting these borderlines is about setting priorities.

(b) Learning outcomes statements provide a reference (criterion) for assessment. Experiences from criterion-referenced assessment and validation point to the important distinction between content and construct validity. While

content validity refers to a phenomenon (for example tasks or skills) which can be directly and unambiguously observed, construct validity measures performance indirectly and in relation to a theoretically constructed reference. When writing learning outcomes for assessment, this distinction needs to be kept in mind. Overlooking it may create a bias towards easily observable tasks and skills, and away from the more complex (and sometimes more important) underpinning competences (as illustrated by Chapter 5).

(c) Learners meet the intended learning outcomes to different degrees. A few only meet minimally acceptable standards, others fall in between, and a third group will reach excellence. These levels of performance – articulated through assessment specifications – can be clarified using learning outcomes statements.

(d) It is often said that learning outcomes need to be written as threshold statements, as (minimum) requirements to be met by the learner. Learning outcomes written as threshold statements do not prevent learners going beyond these thresholds: they orient a learning process but should not contain or restrict it. Some of the criticism of learning outcomes is linked to this point, implying that the process of stating outcomes prevents learners going beyond minimum expectations. Table 26 illustrates how different levels of mastery/achievement can be specified, avoiding this limitation.

Table 26. **Levels of mastery in assessment criteria: Finnish vocational qualification (waiter)**

Learning outcomes	Assessment criteria
The student or candidate	**The student or candidate**
1. serves customers in accordance with the business idea or operating guidelines of the establishment	1. (excellent): 'notes the customer's arrival and serves them politely and on his/her own initiative as a representative of the establishment' 2. (good): 'notes the customer's arrival and serves them politely as a representative of the establishment in accordance with set guidelines' 3. (satisfactory): 'notes the customer's arrival and serves them politely as a representative of the establishment, but occasionally requires assistance'
2. ensures customer satisfaction	1. (excellent): 'actively solicits feedback on services or products, thanks the customer, and forwards the feedback to their supervisors' 2. (good): 'receives customer feedback on services or products, thanks the customer, and forwards the feedback to their supervisors' 3. (satisfactory): 'receives customer feedback on services or products and thanks the customer'

Source: Finnish National Board of Education, 2011, p. 24.

(e) Assessment criteria are generally designed to be more specific than the intended learning outcomes of a qualifications and (even) a module. This is illustrated in Box 5, showing how assessment criteria and method are linked.

Box 6. **Assessment criteria and methods**

The essay will be word-processed and between 1 500 and 2 000 words on a given topic. The essay will relate to its title, will be clearly written and structured and will demonstrate the contribution of further reading and thinking. The student will be able to explain how the essay demonstrates these features and how they contribute to the overall effectiveness:

- grammar and spelling will be accurate;
- there will be reference to at least seven relevant books/papers;
- these will be correctly referenced in the recommended manner;
- there will be some evidence of analysis of ideas;
- there will be some demonstration of synthesis of ideas at least in the summary and conclusion;
- there will be an appropriate structure with evidence of introduction, development and conclusion;
- in addition, in an oral session, with reference to his/her essay the student will discuss the features of an essay that make it effective, and will show how these features work towards the effectiveness of the essay.

Source: Moon, 2002, pp. 89-90; European Commission, 2011, p. 27.

(f) It is commonly stated that learning outcomes should be measurable, and that the learner needs to be able to demonstrate achieved learning in an observable way. This measurability requirement should be treated with some caution, as illustrated by the example in Box 6.

Box 7. **The challenge of measurability**

It is possible to state that a learner should have acquired learning outcomes making him/her able to handle a specific emergency. However, how is it possible to be objective about these competences when an emergency can only be simulated in a learning situation? If the individual is to be able to react to an emergency confidently and with authority, how can these attitudes be measured? Some forms of knowledge, skills and competences are difficult to write as measurable learning outcomes, particularly tacit and highly contextualised knowledge and skills.

Source: European Commission, 2011, p. 14.

(g) The link between learning outcomes statements and assessment points to tension between reliability and validity:

(i) strong reliability requires that the same assessment outcomes be achieved independently of the time and location of the assessment;
(ii) strong validity implies that the essence of (diverse) individual learning experiences are captured and related to the assessment criteria.

(h) When writing assessment criteria, it is necessary to strike a balance between 'closed' and 'open' statements; too rigid and narrow assessment criteria can 'dumb down' the assessment process in a way which does not respect the experiences of the learner.
(i) Assessment criteria need to consider ethical boundaries, such as whether to address personality traits which can be considered 'private'. This is an area which is closely associated with the growing importance of transversal skills and competences, often closely related to the personal characteristics of the learner.
(j) Formative assessment can act as a bridge between the teaching and learning phase and the summative assessment. Formative assessment enables a learner to reflect on progress in relation to intended outcomes, turning these into a critical tool directly supporting the learning process. When used to support formative assessment, reflection (by both learner and teacher) becomes possible, potentially avoiding a narrow or 'reductionist' interpretation of the outcomes in question.

9.6. Summing up

The following key points, considering the conclusions and recommendations of European Commission (2011, pp. 42-43), summarise the messages of this handbook.

(a) Learning outcomes are always written for particular purposes and applied in a national, institutional and/or discipline context. They need to be fit-for-purpose and there is no single fit-for-all solution; the use of learning outcomes needs to strike a balance between rigidity and flexibility. Learning outcomes need to be formulated in a way that supports or allows for flexibility in approaches to learning and qualification, especially if lifelong learning and/or individually adapted education and training is to be encouraged.
(b) Writing learning outcomes is a balancing act seeking to address partially contradictory requirements.
(c) If learning outcomes are too broad and generic, they will need to be complemented by more detailed school curricula or assessment standards.
(d) If learning outcomes are too specific, it can be difficult for people coming

from outside the formal education and training system to fully understand them.

(e) If qualifications descriptions are too specific (especially if they have a binding aspect) they may hinder evolution and innovation as they would need to be updated too often.

To summarise, 'the use of learning outcomes can bring a strong focus to the purposes of teaching, assessment, validation and certification. Learning outcomes provide the language that enables different (quality assurance) stakeholders to interact and coordinate.

PART IV.
Resources and sources supporting the definition, writing and use of learning outcomes

This part of the handbook explains the process of collecting existing material on learning outcomes, in the form of guidance material presented at national or institutional level and in the form of research. This section is meant to develop and grow over time and provide a resource to be used by policy-makers, practitioners and researchers alike.

CHAPTER 10

Literature search and database development

Since September 2019, Cedefop has continued internal work in relation to the update of the European Handbook on defining and writing learning outcomes. Building on the work carried out for the first handbook, an extensive literature search has been carried out covering a wide range of areas where learning outcomes play a role. The material identified and collected this way can be made available through an online database forming an integral part of the learning outcomes project. This database needs regular updating/extending, notably through input from the countries and regions involved in the work. For the moment, and to be further elaborated, the material is organised according to the following categories:

(a) purpose of the use of learning outcomes;
    (i) qualifications frameworks;
    (ii) standards;
    (iii) curricula;
    (iv) assessment;
    (v) teaching and training;
    (vi) governance;
(b) resource type (publications, journals, articles, examples of good practices);
(c) level of education and/or economic sector;
(d) country/region/sector.

Cedefop is currently going through/examining the collected material in pursuit of reaching a deeper understanding of what has been researched so far. We have noticed some repetitive patterns and the need for further research in certain fields.

A number of policy learning events ([44]) have been organised by Cedefop since 2015 to establish a continuous process of sharing and learning and provide a platform for European cooperation on the application of learning outcomes; allowing for the identification of common challenges as well as solutions.

([44]) See the relevant event web pages for 2015, 2016, 2018 and 2022.

The current edition of the European handbook has been developed in close cooperation with colleagues and stakeholders inside and outside Europe. The work supported by UNESCO on the World reference levels (WRL) tool ([45]) has in contributed especially to this handbook. The WRL, by focusing on how learning outcomes can support the understanding of skills and qualifications on a cross border basis, complements our work in important ways.

Box 8. **WRL tool**

- The WRL tool uses 11 factors which are commonly found in tools for organising and evaluating qualifications, jobs, etc. to create a description in WRL terms.
- Each factor is described at eight stages and users are asked, factor-by-factor, to decide which stage is the best match for the outcomes of their qualification/credential, entry/work role requirements, or framework level.
- The answers are used to create a graphical profile.
- Users are also asked to enter the evidence which supports the matching, and this is used to create a more detailed report. Throughout the process, users can control the sequence of the review and amend their responses and judgements.

([45]) The WRL digital tool helps end-users to translate any outcomes-based specification (for a qualification or other credential, entry requirements, job specification or framework level) into an internationally recognised form of description which they can use in deciding on or negotiating recognition or progression arrangements. For more information see the World reference levels leaflet

CHAPTER 11

Learning Outcomes resources

Table 27. **Overview of guidance material supporting the writing, definition and use of learning outcomes**

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Austria		
VET	Federal Ministry of Education, Science and Research (formerly Federal Ministry of Teaching, Arts and Culture)	*(2011) Broschüre Bildungsstandards: Soziale und personale kompetenzen, 9.-13. Schulstufe [booklet on educational standards: social and personal competences 9-13th grade].* https://www.bildungsstandards.berufsbildendeschulen.at/sites/default/files/broschuere/BBS-Bildungsstandards-Broschuere-Soziale-und-Personale-Kompetenzen.pdf
	Federal Ministry of Education, Science and Research (at time of publication Federal Ministry of Education and Women)	(2015) *Bildungsstandards in der Berufsbildung: Projecthandbuch [educational standards in vocational education: project manual]* https://www.bildungsstandards.berufsbildendeschulen.at/sites/default/files/files/BBS-Bildungsstandards-Handbuch-BIST-15.10.2015.pdf
HE	University of Technology, Vienna	(2018) *Leitfaden zur Studienplan-Erstellung für Bachelor- und Masterstudien [guideline for curricula development of Bachelor- and Master programmes].* https://www.tuwien.at/index.php?eID=dms&s=4&path=Satzung/Studienplan-Erstellung%2520Leitfaden.pdf Teaching Support Centre – Individual Consultation: https://tsc.tuwien.ac.at/beratung-und-training/beratung-zu-lernergebnisorientierung/
	Vienna University of Economics and Business	(2019) *Teaching and Learning Academy: Learning Outcomes.* https://learn.wu.ac.at/open/tlac/learningoutcomes

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Austria						
		x				A simple reference
			x	x		
		x				
x		x	x			

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Austria		
Adult Education	Federal Ministry of Education, Science and Research	(2012) *Lernergebnisorientierung in der Erwachsenenbildung: Leitfaden zur lernergebnisorientierten Curriculumentwicklung [Learning outcomes orientation in adult education: guideline for learning outcomes-based curricula development].* https://erwachsenenbildung.at/downloads/service/Lernergebnisorientierung_Leitfaden_web.pdf
Belgium/Flanders		
HE	Flemish Ministry of Education and Training, Agency for higher education, adult education, qualifications and study grants	(2012) *De Vlaamse kwalificatiestructuur: ontwikkelend, goedgekeurd, geïmplementeerd [The Flemish qualification structure: developed, approved, implemented].* https://vlaamsekwalificatiestructuur.be/wat-is-vks/meer-info-en-downloads/files/Brochure-Developed_Approved_Implemented-(En)-12-2012.pdf
	Accreditation Organisation of the Netherlands and Flanders, NVAO	(2016) *Assessment and demonstration of achieved learning outcomes: recommendations and good practices.* http://impea.eu/wp-content/uploads/2020/12/Report-Achieved-Learning-Outcomes-Recommendations-and-Good-Practices-2016.pdf
	University College Odisee (merger between Hogeschool-Universiteit Brussel and Katholieke Hogeschool Sint-Lieven)	*ECTS » competence profiles/programme-specific learning outcomes academic year 2016-17: bachelor of nursing 4 years HDE* (professional bachelor). https://webapps.odisee.be/ECTSCompetenties/Competentieprofiel.aspx?taal=E&OPLID=445&ACJ=2016
	VLUHR (Flemish Universities and Colleges Council) – Quality Assurance Unit	*(2018) Handleiding Formuleren Domeinspecifieke Leerresultatenkaders [Manual for writing domain-specific learning outcomes frameworks].* https://www.kwaliteitszorg.vluhr.be/files/Docs/Handleiding-Formuleren-DLRs.pdf Individual Consultation: https://www.qualityassurance.vluhr.be/our-services/learning-outcomes
	Catholic University of Leuven	*Denkkader rond curriculumontwikkeling [Thinking about curriculum development].* https://www.kuleuven.be/onderwijs/werken_opl/

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Austria						
x		x	x			x
Belgium/Flanders						
x						x
			x			x
x		x				
x	x	x	x	x		x
x		x				

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Bulgaria		
VET	National Agency for Vocational Education and Training	(2015) *Методически указания за разработване на държавни образователни изисквания за придобиване на квалификация по професии (утвърдени от УС на НАПОО с протокол № 01/18.02.2015 г.) [Methodological instructions for the development of State educational requirements for acquisition of professional qualifications (approved by the NAVET Executive Board with protocol No 01/18.02.2015)].* http://www.navet.government.bg/bg/media/Metodicheskii_ukazania_DOI_07_04_2015.pdf
HE	National Evaluation and Accreditation Agency	(2016) Criteria system for programme accreditation of professional fields and majors from the regulated professions. https://www.neaa.government.bg/images/Criteria_EN/Kriterii_PN_SRP_EN.pdf
Croatia		
VET	Ministry of Labour, Pension System, Family and Social Policy	Smjernice za izradu standard zanimanja [Guidelines for developing occupational standards]. http://www.kvalifikacije.hr/sites/default/files/documents-publications/2017-08/Smjernice%20za%20izradu%20standarda%20zanimanja.pdf
VET and adult education	Agency for VET and Adult Education	(2011) *Metodologija za razvoj strukovnih standarda zanimanja, kvalifikacija i kurikuluma [Methodology for developing standards and curricula].* http://www.asoo.hr/UserDocsImages/projekti/kvalifikacije/eu%20knjige/3%20Metodologija.pdf
		(2011) Primjeri standarda s ishodima učenja E-qualification (E-kvalifikacije) [Learning outcomes example of a standard]. http://e-kvalifikacije.asoo.hr/pages/search/index.xhtml

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Bulgaria						
		x				
x	x			x		A simple reference
Croatia						
	x	x				
x	x	x				
x	x	x				

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Estonia		
VET	The Ministry of Justice via State Gazette (Riigi Teataja)	(2019) Standard of Vocational Education. https://www.riigiteataja.ee/en/eli/515012020003/consolide
HE		(2009) Standard of Higher Education, Annex 1: Learning outcomes at higher education level and their link with the qualifications framework. https://www.riigiteataja.ee/en/eli/524092014013/consolide
GE		(2020) National Curriculum for Basic Schools. https://www.riigiteataja.ee/akt/114012011001?leiaKehtiv (2020) National Curriculum for Upper Secondary Education. https://www.riigiteataja.ee/akt/128072020013?leiaKehtiv
Finland		
VET	The Finnish National Board of Education	(2015) *Inspiring and Strengthening the competence-based approach in all VET in Finland – Support material for implementation.* https://www.oph.fi/sites/default/files/documents/167400_inspiring_and_strengthening_the_competence-based_approach_in_all_vet_in_finl.pdf
VET and Adult education		(2015) *Ammatilliset perustutkinnot ja niitä koskevat säädökset ja määräykset ammatillisessa peruskoulutuksessa [Implementation of vocational requirements as initial vocational education and training and competence-based qualifications].* https://www.oph.fi/sites/default/files/documents/168861_ammatillisten_perustutkintojen_perusteiden_toimeenpano_ammatillisessa_perusk.pdf

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Estonia						
	x	x				
x		x				
	x	x	x			
Finland						
	x	x	x			x
x	x	x	x	x	x	

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
France		
HE and VET	Ministry of agriculture	(2009) *Guide d'écriture des référentiels de diplômes professionnels [Writing guide of professional diplomas standards].* https://chlorofil.fr/fileadmin/user_upload/02-diplomes/referentiels/secondaire/btsa/info-communes/btsa-guide-ecriture.pdf
Germany		
HE	University of Applied Science Aachen	(2007) *Lernergebnisse: Begriffe, Zusammenhänge, Umsetzung und Erfolgsermittlung. Lernergebnisse und Kompetenzvermittlung als elementare Orientierungen des Bologna-Pozesses [Learning outcomes: terminology, relations, application and identification of success. Learning outcomes and imparting of competence as key elements of the Bologna Process].* https://opus.bibliothek.fh-aachen.de/opus4/frontdoor/deliver/index/docId/195/file/schermutzki_bologna_6_a5_sw.pdf
Adult Education	Adult Education Centre of Munich	(2012) *Leitfaden zur Formulierung von Lernergebnissen in der Erwachsenenbildung [guide for the formulation of learning outcomes in adult education].* https://www.mvhs.de/fileadmin/user_upload/importiert/8748/3125fa33225.pdf
	German Institute for Adult Education (DIE)	Lernergebnisorientiert formulieren und gestalten [Formulating and designing learning outcomes]. https://wb-web.de/material/methoden/lernergebnisorientiert-formulieren-und-gestalten.html
Greece		
VET	National Organisation for the Certification of Qualifications and Vocational Guidance (EOPPEP)	Dželalija Mile (2015). *Methodology for the design and development of learning outcomes.* http://www.anc.edu.ro/wp-content/uploads/2020/07/Methodology-for-the-Design-and-Development-of-Learning-Outcomes.pdf

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
France						
		X				
Germany						
x		x	x			
x		x				x
Greece						
		x	x			x

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Hungary		
VET	National Coordination Point of the European Qualifications Framework (Education Office)	(2014) *Hatások és különbségek: másodelemzések a hazai és nemzetközi tanulói képességmérések eredményei alapján [Impacts and differences: domestic and international secondary analyses of the results of students' competence assessments].* https://www.oktatas.hu/pub_bin/dload/unios_projektek/tamop318/Hatasokeskulonbsegek_Masodelemzes.pdf
HE	National Coordination Point of the European Qualifications Framework (Education Office)	(2017) *Segédlet a tanulási eredmények írásához a felsőoktatási szektor számára [A guide to writing learning outcomes for the higher education sector].* http://www.oktatas.hu/pub_bin/dload/LLL/ekkr/Tanulasieredmenyek_HE.pdf
Ireland		
GE	National Council for Curriculum and Assessment	(2009) Key skills framework: Senior cycle. https://ncca.ie/media/3380/ks_framework.pdf (2019) Booklet: Focus on learning outcomes. https://ncca.ie/media/4107/learning-outcomes-booklet_en.pdf
	Department of Education and Skills	(2019) Politics and society: Curriculum specification. https://www.curriculumonline.ie/getmedia/ee597f5d-180a-4531-ba50-2f4c966f2df3/Politics-and-Society-new.pdf

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Hungary						
		x	x			x
		x	x			x
Ireland						
		x				
		x	x	x		

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Ireland		
HE	Dublin Institute of Technology	(2007) *Guide to writing learning outcomes* https://www.dit.ie/lttc/media/ditlttc/documents/Microsoft%20Word%20-%20LearningOutcomesGuide.pdf
	University of Limerick	(2008) *Writing learning outcomes: a guide for academics (version 2).* https://www.ul.ie/ctl/sites/ctl/files/user_media/documents/support_-_writing_learning_outcomes_at_programme_and_module_levels.pdf
	University sector framework implementation network (FIN)	(2009) *University awards and the national framework of qualifications (NFQ): issues around the design of programmes and the use and assessment of learning outcomes.* http://www.nfqnetwork.ie/A_Guide_to_designing_UNiversity_Awards_for_Inclusion_in_t he_National_Framework_of_Qualifications/ Default.132.html
	Trinity College Dublin	(2015) *Writing learning outcomes: a guide for academics.* https://www.tcd.ie/CAPSL/resources/Curriculum-design/writinglo.php
	National University of Ireland Galway	Guidance material on learning outcomes. http://www.nuigalway.ie/centre-excellence-learning-teaching/teachinglearning/learningoutcomes/index.html
Latvia		
VET	National Centre for Educational Content	(2020) *Metodiskie materiāli profesionālās izglītības programmas izstrādei un modulārās programmas izstrādei [Methodological materials for vocational training programmes and for the development of a modular programme]* https://www.visc.gov.lv/lv/metodiskie-materiali-3

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Ireland						
x	x	x				
x	x	x				
x			x			x
		x				x
		x				
Latvia						
x	x	x	x			

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Malta		
VET	Directorate for Quality and Standards in Education	(2012) Learning outcomes framework: Dashboard. https://www.schoolslearningoutcomes.edu.mt/en/dashboard (2012) Learning outcomes framework: Tools for teachers. https://www.schoolslearningoutcomes.edu.mt/en/pages/tools-for-teachers (2015) *Educator's guide for pedagogy and assessment: Using a learning outcomes approach.* https://www.schoolslearningoutcomes.edu.mt/files/documents/12_Italian.144501525266.pdf
	National Commission for Further and Higher Education (NCFHE)	(2019) *Vocational education and training (VET) credit conversion system:* *Manual for the conversion of qualifications into the ECVET system* https://docplayer.net/7763642-Vocational-education-and-training-vet-credit-conversion-system-manual-for-the-conversion-of-qualifications-into-the-ecvet-system.html
Netherlands		
VET	Leer- en Innovatiecentrum (LIC)	(2014) Competentiegericht toetsen [assessing competences]. http://lic.avans.nl/service.lic/
	Foundation for vocational education and labour market	(2016-17) *Instructies bij het ontwikkelen van kwalificatiedossiers mbo, inclusief keuzedelen en verantwoordingsinformatie [Instructions in the development of vocational qualification files, including optional modules and justification].* https://www.s-bb.nl/file/2285/download?token=c7p2Ye0n
	Nederlands partnerschap leven lang leren (NCP NLQF)	(2018) Handleiding voor inschaling: het formuleren van leerresultaten en het onderbouwen van het NLQF-niveau [Manual classification on the formulation of learning outcomes: underpinning the NLQF levels on the basis of the descriptors of the NLQF]. https://www.nlqf.nl/images/downloads/Verzoek_tot_inschaling/6_Handleiding_Inschaling_Formuleren_van_Leerresultaten_13042018.pdf

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Malta						
x		x	x			x
x				x	x	x
Netherlands						
			x			
	x					x
x	x			x	x	x

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Netherlands		
HE	Vrije Universiteit (University of Amsterdam)	(2004) *A self-directed guide to designing courses for significant learning.* https://www.deefinkandassociates.com/GuidetoCourseDesignAug05.pdf
	Organisation for international corporation in higher education © Nuffic/Tuning Association	(2010) *A guide to formulating degree programme profiles: including programme competences and programme learning outcomes.* http://tuningacademy.org/wp-content/uploads/2014/02/A-Guide-to-Formulating-DPP_EN.pdf
	University of Utrecht (Faculty of Humanities, Centre for teaching and learning)	(2011) *Wat kenmerkt een goed leerdoel? Alles over toetsen 17 [what characterizes a good learning objective? About 17 keys].* https://vimeo.com/29314808
	University of applied science of Amsterdam	(2013) *Hogeschool van Amsterdam leidraad toetsen en beoordelen [guide for testing and assessment].* https://score.hva.nl/Bronnen/HvA%20Leidraad%20Toetsen%20en%20Beoordelen.pdf
	Dutch Partnership LLP (NPLL)	(2013) *Eindniveau: associate degree [qualifying level: associate degree].* www.leidoacademy.nl/doorzeven/wp-content/uploads/2012/04/Beschrijving-van-Ad-Eindniveau-LN-Ad-juli-2013-versie-1.doc
		(2015) *Het formuleren van leerresultaten: praktische handleiding hoger onderwijs [Formulating learning outcomes: a practical guide for higher education]* http://www.leidoacademy.nl/doorzeven/wp-content/uploads/2011/11/Het-formuleren-van-leerresultaten-HO-02042015-def.pdf
	University of Twente (Centre of Expertise in learning and teaching)	(2019) The University teaching qualification (UTQ), UTQ Competences https://www.utwente.nl/en/ces/celt/utq/

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Netherlands						
x		x				
x	x	x	x	x	x	
			x			
			x			
x		x				
x		x	x	x		
		x				

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Netherlands		
HE/VET	Virtual mobility and European qualifications framework (VIRQUAL)	(2011) *Simple guide for institutions.* http://virqual.up.pt/sites/default/files/map/InstitutionManual.pdf
		(2011) *Simple guide for teachers.* http://virqual.up.pt/sites/default/files/map/TeacherManual.pdf
		(2011) *Simple guide for learners* http://virqual.up.pt/sites/default/files/map/LearnerManual.pdf
Norway		
HE	Ministry of Education and Research	(2011) *Nasjonalt kvalifikasjonsrammeverk for livslang læring (NKR) [National qualifications framework for lifelong learning].* https://www.regjeringen.no/globalassets/upload/kd/vedlegg/kompetanse/nkr2011mvedlegg.pdf
Poland		
VET	Instytut Badan Edukacyjnch	(2016) *How to describe market qualifications for the Polish qualifications system: a guidebook.* https://depot.ceon.pl/bitstream/handle/123456789/17020/2016_Ziewiec-Skokowska_Danowska_St%c4%99ch%c5%82y_Describing%20market%20qualifications.pdf
VET and adult education	National Centre for Supporting Vocational and Continuing Education	(2013) *Kształcenie zawodowe i ustawiczne: vadamecum [Vocational and continuing education: a handbook].* https://wyszukiwarka.efs.men.gov.pl/product/kształcenie-zawodowe-i-ustawiczne-vademecum/attachment/2080

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Netherlands						
x		x	x			x
Norway						
	x	x			x	x
Poland						
	x					
x	x	x		x	x	x

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Poland		
HE	Ministry of Science and Higher Education	(2010) *Autonomia programowa uczelni: Ramy kwalifikacji dla szkolnictwa wyższego [The autonomy of the university curriculum: qualifications framework for higher education].* https://brjk.amu.edu.pl/__data/assets/pdf_file/0008/59435/krk.pdf
		(2011) *Rozporządzenie Ministra Nauki i Szkolnictwa Wyższego z dnia 2 listopada 2011 r. w sprawie Krajowych Ram Kwalifikacji dla Szkolnictwa Wyższego (Dz.U. 2011 nr 253 poz. 1520) [Regulation of the Minister for Science and Higher Education of 2 November 2011 on the national qualifications framework for higher education (Journal of Laws 2011, No 253, item 1520)].* http://eli.gov.pl/eli/DU/2011/1520/ogl/pol
Portugal		
VET	National Agency for Qualification and Vocational Education and Training (ANQEP, I.P.)	(2015) *Guia metodológico: conceção de qualificações baseadas em resultados de aprendizagem [methodological guidebook: design of qualifications based on learning outcomes].* https://www.forma-te.com/mediateca/viewdownload/28230-guia-metodologico-concecao-de-qualificacoes-baseadas-em-resultados-de-aprendizagem
Romania		
VET	National Qualifications Authority	(2011) *Legea educației naționale nr. 1/2011 [Law of national education No 1/2011] (containing information on learning outcomes).* http://lege5.ro/Gratuit/geztsobvgi/legea- educatiei-nationale-nr-1-2011
	Ministry of National Education: National Centre for Technical and Vocational Education and Training Development	(2019) *Curriculum for technical and vocational education.* https://www.alegetidrumul.ro/uploads/proiecte_Brosura_CRR_ENG_FINAL.pdf https://www.alegetidrumul.ro/uploads/proiecte_Brosura_CRR_RO_FINAL.pdf (RO)

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Poland						
x	x			x	x	x
x	x			x	x	x
Portugal						
	x					
Romania						
		x				
		x	x			A simple reference

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
Slovenia		
VET	National Education Institute of the Republic of Slovenia for VET	(2006) *Kurikul na nacionalni in šolski ravni v poklicnem in strokovnem izobraževanju-Metodološki priročnik [methodological guide for drafting educational standards and VET curricula].* https://www.worldcat.org/title/kurikul-na-nacionalni-in-olski-ravni-v-poklicnem-in-strokovnem-izobraevanju-metodoloki-pironik/oclc/448706074
VET, HE	Centre of the Republic of Slovenia for Vocational Education: Slovenian Qualifications Framework	(2016) *Smernice za implementacijo in uporabo slovenskega ogrodja kvalifikacij in učnih izidov v praksi [Guidelines for the implementation and use of the Slovenian framework of qualifications and learning outcomes in practice].* https://www.nok.si/sites/www.nok.si/files/dokumenti/sok_smernice_2016_tisk.pdf
Spain		
VET	Ministry of Education, Culture and Sport. National Institute of Qualifications	(2014) *Bases para la elobaracion del catálogo nacional de cualificaciones profesionales [Basis for the development of the national catalogue of professional qualifications]* https://sede.educacion.gob.es/publiventa/descarga.action?f_codigo_agc=16748&requ est_locale=en
HE	National Agency for Quality Assessment and Accreditation (ANECA)	(2013) *Guía de apoyo para la redacción, puesta en práctica y evaluación de los resultados del aprendizaje [Support guide for drafting, implementing and evaluating learning outcomes].* http://www.aneca.es/Documentos-y-publicaciones/Otras-guias-y-documentos-de-evaluacion/Guia-de-apoyo-para-la-redaccion-puesta-en-practica-y-evaluacion-de-los-RESULTADOS-DEL-APRENDIZAJE
Sweden		
VET, HE, GE	Swedish Agency for Applied Sciences	Så funkar det: Kvalifikationer aprendizaje [How it works: Qualifications]. https://www.seqf.se/sv/Sa-funkar-det/Kvalifikationer/

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
Slovenia						
		x				
x		x		x		x
Spain						
		x				
x		x	x	x	x	x
Sweden						
	x					x

General characteristics of existing guidance material		
Learning context	**Issuing institutions (higher education/ regional authority; national authority; or others)**	**Description of guidance material, (title of document in the original language, English translation, hyperlink)**
ECVET		
VET	National Agency Education for Europe at the Federal Institute for Vocational Education and Training	ECVET mobility toolkit: collection of learning outcomes developed in past projects and initiatives http://www.ecvet-toolkit.eu/tools-examples-more/tools-examples-and-more
Erasmus + funded project		
VET	European Welding Federation	(2017) Rainbow Project *Methodology for writing the learning outcomes in the EWF qualifications* https://project-rainbow.eu/documents/update/A2.1.%20RAINBOW%20Methodology%20for%20design%20IQ%20and%20write%20LOs.pdf

Purpose/intention for writing learning outcomes						
Programme design	**Qualification design**	**Design of teaching/ learning unit (e.g. module, course) – curriculum development**	**Assessment/ assessment standards**	**Quality assurance/ accreditation**	**Geographic mobility of learners/ recognition practices**	**Adherence to NQF level descriptors**
ECVET						
	x	x				
Erasmus + funded project						
	x	x	x	x		

Acronyms

EQF	European qualifications framework
ECVET	European credit system for vocational education and training
ESCO	European skills, competences, qualifications and occupations.
SOLO	structure of observed learning outcomes
TSC	transversal skills and competences

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Defining, writing and applying learning outcomes

A EUROPEAN HANDBOOK – SECOND EDITION

This second edition of the Cedefop European handbook on learning outcomes is addressed to individuals and institutions actively involved in defining and writing learning outcomes in education and training. Its ambition is to act as a reference point for cooperation in this area. It offers concrete examples of the use of learning outcomes and provides an overview of existing guidance and research material supporting the definition and writing of learning outcomes. The revised handbook also aims to promote dialogue between education and training and labour market stakeholders, by building on material from different parts of the education and training system and bridging the gap between institutions and sectors.

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