



RESEARCH PAPER

No 29

Curriculum reform in Europe

The impact of learning outcomes



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Luxembourg: Publications Office of the European Union, 2012

ISBN 978-92-896-1153-4

ISSN 1831-5860

doi: 10.2801/13194

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Foreword

This research paper is part of a series of systematic analyses carried out by Cedefop since 2009 on curriculum policies and practices in Europe. It builds on a previous research paper on *Learning outcomes approaches in VET curricula: a comparative analysis of nine European countries*, published in 2010, and three international workshops organised by Cedefop on curriculum innovation and reform worldwide.

Using a comparative approach, this particular analysis discusses curriculum reform developments in 32 countries, identifies what is successful and why and provides greater insight into two specific sectors: tourism and electronics.

Curriculum is the pillar of the entire educational process; it is a means to achieving the aims of education and training which are dynamic and evolve according to changing social and economic requirements. Naturally, curricula change to reflect shifting trends in education, training and the labour market. According to Cedefop's work on skill mismatch, despite a significant increase in educational attainment rates, 3 out of 10 European companies report a shortage of the skills they need. High and rising unemployment rates, particularly among younger age groups, have also cast doubt on the relevance of the skills that people have acquired as a passport to employment and to suitably matched jobs. Approximately 4 out of every 10 workers in Europe are found to be affected by skill mismatch, where a gap exists between the available skills of the workforce and those required by modern workplaces. The above trends have prompted calls for a rethinking of education and training practices that might be used to bridge the gap as economic and social realities evolve.

The strategic framework on European cooperation in education and training (ET 2020) and the *Bruges communiqué* emphasise that curriculum reform and renewal play an important role in modernising vocational education and training (VET) so that it may become more responsive to learners' employment and personal needs. Learners need to develop and apply a set of key competences and relevant job-specific skills which cannot be acquired through fragmented, content-overloaded curricula that are far removed from real life and the demands of the workplace. A reduction in early school leaving to less than 10% is another strategic objective which is linked, among other policy actions, to curriculum modernisation. The way curricula are designed and taught affects learners' motivation to remain in education and training and to go on to further studies. This overarching goal gives a new impetus to curricula in vocational education and training.

In recent years, a major European-wide trend has been the focus on learning outcomes in the design and renewal of VET curricula. The underlying principle is not only for the flow of new entrants to the labour market to be more geared to meeting its needs but also for individuals to be equipped with the knowledge, skills and competence to become successful, confident and responsible citizens. Indeed, this research emphasises that learning outcomes provide a highly versatile and useful means of disassembling, discussing and redefining curricula in upper secondary vocational education. They form an interface where competing demands of stakeholders are reconciled and compromises reached. Learning outcomes make expectations clear to teachers and learners. However, their design and delivery pose serious dilemmas and challenges to policy-makers, stakeholders and practitioners, with particular regard to the effectiveness and smooth running of curriculum development processes and to ensuring the transparency of learning outcomes associated with the writing process and their coherence with the other components of the written curriculum. The learning methods and environments used for their delivery are crucial to achieving learner-centredness.

By presenting key issues for policy consideration and areas that require further development, we hope to stimulate further debate, research and action on the topic of curriculum change in Europe.

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Acknowledgements

Responsibility for this publication was entrusted to Irene Psifidou, Cedefop project manager, who specified the scope of the research and the appropriate questions, oversaw the implementation of the investigation and redrafted and edited the final report published by Cedefop.

The draft final manuscript was peer reviewed by Slava Pevec Grm, senior Cedefop expert, who provided valuable comments and support.

This paper is the result of a team effort reflecting the work of a research consortium led by Julian Stanley and Andrew McCoshan from the Centre for Education and Industry at Warwick University who conducted the research and fieldwork and drafted the report ⁽¹⁾. We should like to thank the 319 persons (ministry officials, national experts, teachers and students) interviewed in the countries studied who gave valuable feedback (see list of interviewees in Annex 1). Special thanks go to the following national experts who provided detailed country-specific information: Francisca María Arbizu, Anne-Marie Charraud, Trisha Fettes, Božidar Grigić, Prue Huddleston, Andrea Laczik, Faith Muir, Samo Pavlin, Odd Bjørn Ure, Ingrid Vanhoren and Patrick Werquin. We should also like to thank Hubert Ertl of Oxford University who acted as external assessor for this study.

The research paper took account of discussions held at two international workshops on curriculum innovation and reform held by Cedefop in 2011 and 2012 (Cedefop, 2011a; Cedefop 2012a). Workshop participants represented ministries of education, national qualifications authorities, curriculum development agencies, universities, research institutes and international organisations, including the European Commission, Eurydice, IBE-UNESCO, the World Bank, the OECD, the Organisation of Ibero-American States for Education, Science and Culture, and the European Agency for Development in Special Needs Education.

Finally, thanks are also due to Cedefop staff members Joanne Basiakou for providing administrative assistance throughout the project and Silke Gadji for providing technical support for this publication.

⁽¹⁾ Work was carried out under Cedefop service contract No AO/ECVL/IPS/Curricula Study/016/10.

Table of contents

Foreword	1
Acknowledgements	3
Executive summary	10
CHAPTER 1. Curriculum change on the basis of learning outcomes	19
1.1. Introduction: the European policy and research context	19
1.2. Outline of the report.....	21
CHAPTER 2. Study scope and methodology	23
2.1. Research questions.....	23
2.2. Scope of the study.....	24
2.3. Research tools	25
2.3.1. - Country overviews	26
2.3.2. - Case studies	26
2.4. Challenges and limitations of the research	28
CHAPTER 3. Concepts underlying the research.....	30
3.1. What is the ‘written curriculum’? What is the ‘taught curriculum’?	30
3.2. What are ‘learning outcomes’ in VET curricula?	32
3.2.1. - Focusing on the outcomes of learning.....	33
3.2.2. - Defining the inputs and outcomes of learning.....	33
3.2.3. - Basing learning outcomes upon competences	34
3.3. Cross-border differences in the meaning of ‘competence’ and ‘learning outcomes’	36
CHAPTER 4. Prevalence and impact of learning outcomes in curriculum reform	38
4.1. Introduction	38
4.2. Curriculum policy developments in initial VET	38
4.2.1. - Early developers	40
4.2.2. - Recent developers	42
4.3. Curriculum policy developments in the electronics and tourism sectors	43
4.4. The reasons for introducing outcome-oriented curricula	46
4.4.1. - Overarching economic and social goals.....	47
4.4.2. - Operational objectives.....	48
4.5. Challenges facing curriculum policy.....	56
4.6. Key findings.....	57

CHAPTER 5.	The design process for outcome-oriented curricula	59
5.1.	Introduction	59
5.2.	Structuring the design process	59
5.2.1.	Differentiated approaches to curriculum development.....	63
5.2.2.	Undifferentiated approaches to curriculum development.....	65
5.2.3.	Semi-differentiated approaches to curriculum development	66
5.3.	What purpose does the differentiation of the curriculum development process serve?	67
5.4.	Key findings.....	69
CHAPTER 6.	Actors involved in curriculum design	71
6.1.	Introduction	71
6.2.	Who initiates curriculum development?	71
6.3.	Who is involved in curriculum design and how?.....	72
6.3.1.	Working groups.....	73
6.3.2.	Consultation	74
6.3.3.	Governance	76
6.4.	The role of curriculum design experts.....	79
6.5.	The role of vocational schools	81
6.5.1.	Developing national training standards	82
6.5.2.	Developing school-based training programmes.....	82
6.6.	Challenges to curriculum design.....	85
6.6.1.	Encouraging employer engagement.....	85
6.6.2.	Balancing different interests	88
6.6.3.	Expense, time constraints and other risk factors	89
6.7.	Key findings.....	90
CHAPTER 7.	The written curriculum: the form and function of learning outcomes	92
7.1.	Introduction	92
7.2.	How do learning outcomes set norms for teaching, learning and assessment?	92
7.3.	How do learning outcomes address key competences and generic skills?.....	96
7.4.	How do outcome-oriented curricula address pedagogic guidance?.....	101
7.5.	Key findings.....	104
CHAPTER 8.	The taught curriculum: pedagogies and learning environments	106
8.1.	Introduction	106

8.2. How does the written curriculum influence the taught curriculum?.....	106
8.2.1. Pedagogy in relation to highly granular written curricula.....	106
8.2.2. Pedagogy in relation to written curricula with minimal granularity	107
8.3. Which other factors influence teaching practice?	111
8.4. Outcome-oriented curricula and learner-centred pedagogies	113
8.5. Developing the practice of teachers and trainers	117
8.6. Using formative assessment to drive learner-centredness.....	120
8.7. Making textbooks and other learning materials accessible and usable	121
8.8. Creating effective learning environments.....	124
8.8.1. Learning environments for school-based learning	125
8.8.2. Learning environments for enterprise-based learning.....	127
8.9. Coordination of school-based and enterprise-based training	129
8.9.1. - Institutionalised collaboration	129
8.9.2. - Minimal collaboration	131
8.10. Key findings.....	133
CHAPTER 9. Outcome-oriented curriculum and educational inclusion	136
9.1. Introduction	136
9.2. Inclusiveness as a goal	136
9.3. Inclusiveness through recruitment	137
9.4. Inclusiveness through progression	138
9.5. Inclusiveness and learning styles	139
9.6. Key findings.....	141

CHAPTER 10. Conclusions and policy messages	142
List of abbreviations	150
References.....	152
Bibliography	159
List of databases	167
ANNEXES: Examples of outcome-oriented curriculum design.....	168
ANNEX 1. List of interviewees.....	169
ANNEX 2. Examples of differentiated curriculum development approaches.....	174
ANNEX 3. Examples of undifferentiated curriculum development approaches.....	179
ANNEX 4. Examples of semi-differentiated curriculum development approaches.....	181
ANNEX 5. Competences in occupational standards connected to learning outcomes in qualification standards	182
ANNEX 6. Learning outcomes in qualification standards connected to learning outcomes in education standards	188
ANNEX 7. Learning outcomes in qualification standards connected to learning outcomes in training standards (learning programme)	191
ANNEX 8. Learning outcomes in curricula connected to assessment criteria.....	194
ANNEX 9. Learning outcomes in curricula connected to content.....	198

List of figures, tables and boxes

Figures

1	Visual summary of the research design	26
2	The place of the curriculum in the relationship between the VET system and the labour market.....	61

Tables

1	Sector allocation within the 32-country overview	24
2	Case studies.....	27
3	A theoretical model for the outcome-oriented curriculum approach in Europe.....	63
4	Degree of differentiation in the design process	67
5	High, medium and low granularity.....	94
6	Proposal for the organisation of enterprise-based learning in France	130
7	Stages in the development of tourism and gastronomy curriculum in Slovenia in comparison to the theoretical model.....	175
8	Stages in the development of technician in tourism curriculum in Romania in comparison to the theoretical model	176
9	Stages in the development of <i>baccalauréat professionnel des systèmes électroniques et numériques</i> curriculum in France in comparison to the theoretical model	176
10	Luxembourg: stages in the development of IVET curricula in comparison to the theoretical model	177
11	France: development of <i>baccalauréat professionnel des systèmes électroniques et numériques</i> in comparison to the theoretical model	178
12	UK (England): stages of curriculum development for NVQ level 3 in travel services in comparison to the theoretical model	179
13	Ireland: stages of curriculum development for traineeship in professional cooking in comparison to the theoretical model	179
14	Finland: stages of curriculum development for qualification in tourism sales, information services and travel counsellor in comparison to the theoretical model	180
15	Spain: stages of curriculum development for higher technical tourist guide, information and assistance in comparison to the theoretical model	180
16	Hungary: stages of curriculum development for tourism adviser curriculum compared to the theoretical model	181
17	Comparison between the occupational and qualification standards to organise and implement travel and tourism promotional activities in the UK (England).....	184
18	Professional profile and training module, higher technical tourist guide, information and assistance, Spain	186

19	Comparison between the qualification standard and the training programme in Ireland	192
20	Unit in business communication, from the gastronomy and tourism curriculum, Slovenia (2007)	196
21	Content in the electrical engineering curriculum, Croatia	199
22	Learning outcomes matched against content, engineering technology, Czech Republic	200

Boxes

1	Finland – giving learning outcomes greater leverage in the curriculum	41
2	Portugal – developments in adult training influencing IVET	43
3	Study sectors and occupations: state of play	45
4	Curriculum in Spain	80
5	Collaborating to produce a shared training standard in Ireland	83
6	School-based curriculum design in Slovakia.....	84
7	The training plan at ‘N’ company in Norway.....	86
8	Module employment skills (MES) programme in Poland.....	86
9	Key competences in the tourist travel counsellor programme in Finland.....	99
10	Boosting key competences in outcome-oriented curricula in the Netherlands	99
11	Cultural and civic competences in outcome-oriented curricula.....	100
12	Curriculum examples of low-level pedagogic guidance.....	102
13	Curriculum examples of intermediate-level pedagogic guidance	102
14	Curriculum examples of high-level pedagogic guidance	103
15	Shaping pedagogy through assessment in France	104
16	Learning informed by competences in Spain	107
17	Work-based pedagogy in Norway	110
18	Turning learning outcomes into teaching in Denmark	112
19	Professional development in Germany	119
20	Formative assessment in enterprise-based training in Norway	122
21	Training firms in Romania.....	127
22	Enterprise-based pedagogy in Norway	128
23	Company-based training in travel services in the UK (England).....	129
24	Strengthening collaboration with businesses through outcome-oriented curricula in tourism, Salpaus further education, Lahti, Finland	132
25	Practical training in enterprises in Slovenia	133
26	Travel agent qualification, Hungary, ISCED 4.....	190

Executive summary

This research paper presents the findings from a Cedefop study on European policies and practices in designing and delivering outcome-oriented curricula in vocational education and training. Previous Cedefop research already showed that learning outcomes approaches to designing curricula in initial vocational education and training (IVET) have great potential value to stakeholders (Cedefop, 2009a; Cedefop, 2010a). Using a comparative approach, this study discusses curriculum reforms geared towards learning outcomes in 32 European countries participating in the Education and Training 2020 strategic framework and aims to provide greater insight into two specific sectors: tourism and electronics.

The study investigates the practice and experience of outcome-oriented approaches at three levels: policy development, written curricula and taught curricula. The written curriculum refers to all those documents which provide the framework for planning learning experiences, while the taught curriculum refers to the programme of teaching and learning that is undertaken by teachers and learners in specific learning environments. These three levels of analysis are translated into three sets of research questions:

- (a) what are the drivers for learning outcomes approaches and how are they introduced across Europe? How is outcome-oriented curriculum development carried out? Which actors are involved in curriculum design? What are their roles and functions?
- (b) how are learning outcomes used to design written curricula? How is consistency with standards and assessment criteria guaranteed? How do learning outcomes combine or separate knowledge, skills and competence?
- (c) what teaching and learning methods are used to deliver outcome-oriented curricula successfully? How are learning environments organised? To what extent do new curricula promote learner-centredness and inclusiveness in teaching and learning processes?

To answer these questions, the study followed two approaches.

First, national reports were produced to paint a picture of curriculum reform in the two sectors and to provide an account of the character, structure, organisation and design of the selected written curricula. Curricula were selected from two occupations: tourist information officer and mechatronics technician. This choice allowed us to consider whether outcome-oriented approaches differ between two contrasting employment sectors: a service and an industry-oriented sector. The country reviews were based upon secondary analysis of existing

literature supplemented with national information on latest developments collected through 82 interviews with key stakeholders including ministry officials and curriculum specialists. The analysis used a theoretical model developed to compare curricula and make sense of their development and influence.

Second, the research involved visits to 25 vocational schools, training providers and colleges in 14 countries to allow in-depth analysis of selected curricula and to gather the views and perceptions of 237 curriculum experts, teachers, employers and learners.

The findings show that curriculum reforms geared towards learning outcomes are becoming more widespread in Europe. However, it is not easy to make judgments about the extent to which outcome-oriented curricula for initial vocational education and training (IVET) have been developed in different countries, as a number of issues need to be taken into account.

First, VET curricula have always been outcome-focused to some degree, otherwise they would not have been fit for purpose in the labour market. However, the pace of labour market change means that curricula are likely to need updating more frequently than in the past, with occupations emerging or changing at unprecedented rates.

Second, there are several countries which have had competence-based approaches for a number of years but have not introduced them into IVET: instead, some countries (such as Spain) demonstrated features relating to adult and continuing training. In other countries, such as Germany or France, competence-based IVET curricula have been a reality for years now, but approaches and concepts continue to evolve as a result of more recent reforms.

Third, it is very difficult to ascertain whether the learning outcomes approach has been introduced into curricula in a meaningful way or whether its introduction has been more or less a paper exercise. Finally, there is not yet a common benchmark or reference point against which to judge progress, since interpretations of learning outcomes and competences vary among countries and types of VET in Europe ⁽²⁾.

Although dating the introduction of outcome-oriented curriculum development is difficult, the study identified the following groups of countries:

⁽²⁾ In the context of this study, competences refer to practices in the workplace and, by extension, to wider social and personal practices. Learning outcomes are situated within an educational context and are validated by their relationship with competences. Learning outcomes are defined as statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined as knowledge, skills and competences (European Parliament and Council of the EU, 2008, Annex 2).

- (a) early developers: somewhat less than half of the countries analysed where outcomes orientation began in the 1990s or earlier (Belgium (Flanders), Finland, France, Hungary, Ireland, Lithuania, the Netherlands, Norway, Poland, Romania, Slovenia, Sweden and the United Kingdom);
- (b) recent developers: over one half of countries which have introduced outcomes orientation since 2005, mostly in central and eastern Europe and the Mediterranean countries, where the introduction of learning outcomes is part of major reform, modernisation and updating programmes (Austria, Belgium (Walloon), Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Germany, Greece, Iceland, Latvia, Liechtenstein, Malta, Portugal, Slovakia, Spain and Turkey).

Nevertheless, the progress of outcomes orientation in curricula is hardly ever linear. Education and training systems are dynamic, and the political process is constantly balancing and rebalancing priorities in response to a wide range of pressures. Curricula in the Netherlands, Finland and the United Kingdom, for example, have been rewritten on several occasions to get the balance right. Accordingly, the precise form and function of learning outcomes in curricula in any one country is subject to ongoing adjustment. Outcome-oriented approaches are also not resistant to changes in government policy. In the United Kingdom, for example, a combination of a new government and austerity measures to reduce costs has meant the withdrawal of a set of outcome-oriented curricula, the Diploma, which had been developed to guide VET programmes nationally at ISCED levels 2 and 3 for 14-19 year-olds. Wider economic circumstances (e.g. economic crisis) may also have effects on the further development or implementation of curriculum policy. Economic and administrative problems are reported to be slowing reforms, for example, in Greece and Portugal and creating uncertainty about policy in Hungary.

The reason for introducing outcomes orientation to curriculum design mainly involves economic factors which relate to the policy of seeking to improve national competitiveness through skills development; social equity considerations come second. Equally, it is clear that there is a complex interplay between economic and social factors in curriculum policy development. At a more operational level, outcomes orientation has often been driven by the development of national qualifications frameworks and credit transfer arrangements, with the European qualifications framework (EQF) being a key driver in most countries. Issues relating to the validation of non-formal and informal learning have also been influential in developing policy around outcome-oriented curricula in many countries (such as Bulgaria, the Czech Republic, Denmark, Estonia, Finland, France, Hungary, Iceland, Malta, Norway, Portugal and the UK (England)).

Indeed, in some countries, it is through these validation systems that learning outcomes or competences first appeared some time before the advent of national qualifications frameworks. Issues of inclusion and learner-centredness, while being high on the EU policy agenda and important in research work, were not found to feature prominently in national policy. In only a small number of cases, objectives related to inclusion, reducing early school leaving and improving levels of basic educational attainment are explicitly cited by interviewees as factors in the introduction of learning outcomes (e.g. in Belgium, Denmark and Iceland). In all of the above, the rationale for modernising curricula to increase their quality and relevance is implicit.

An important factor positively affecting outcomes orientation in some countries (for example, Finland, Norway, Portugal and Spain) has been continuing VET, where ideas of competence development and validation often developed before its application in IVET. This might be because it was easier to apply outcome-oriented principles to adults where it was not necessary to take account of wider educational considerations to the same extent.

The comparative analysis of curriculum design processes for the two sectors examined – tourism and electronics – did not reveal any significant differences. The overall trend in Europe to improve social dialogue mechanisms and the advent of national qualifications frameworks seem to have smoothed out any sector-specific differences in curriculum design process that might once have existed in terms of the extent and nature of their engagement with vocational education and training systems. Certainly, there are differences in the nature of the learning outcomes found in curricula serving these two sectors; however, these variations appear to reflect differences in the skills needs of the two sectors rather than methodological or conceptual differences.

This Cedefop study conceptualised the process of designing outcome-oriented IVET curricula as a set of stages which involve the development of four standards: the occupational standard, the qualification/evaluation standard, the education/curriculum standard and the training standard (the training or learning programme). The last three standards have been conceptualised as collectively constituting the written curriculum. Each of these standards exists for a different purpose – to communicate the needs of the labour market or the aims of the education and training system – but each must mesh properly with the others so as to ensure a good fit between IVET and the labour market. This conceptualisation enabled us to develop a theoretical model against which we were able to analyse outcome-oriented approaches to curriculum design in different countries.

The analysis has shown that curriculum development processes differentiate between the four stages and standards to varying degrees. The degree of differentiation in curriculum design process may range from highly differentiated through moderately differentiated to undifferentiated approaches. This is often related to the extent to which IVET curricula combine both vocational and general education elements. Multiple stages in the design process of curricula may lead to the involvement of a greater number of diverse stakeholders and ensure that an outcome-oriented curriculum takes account not only of a particular set of occupation-specific competences but also of learning outcomes associated with curriculum subjects, generic skills and other educational objectives. A drawback of a high differentiation in curriculum design, however, may be that it increases the complexity and reduces pace in the process leading to a VET system which is slow to respond to changes in the labour market. Evidence shows that curriculum change may last from six months to up to three years. However, there are also cases, such as in Croatia, where, although they have distinct stages in the curriculum development process, they still achieve quicker curriculum reforms. This is because stages are shorter and involve fewer participants and stakeholders than in larger countries such as France or Spain.

Decentralisation of the curriculum design process may bring about an adaptation and contextualisation of the curriculum which serves the needs of both employers and learners more effectively. This is because it may encourage relationships between schools and local companies. Curricula developed at provider level depend on the establishment of partnerships and effective negotiations at local level. The study points out that the potential to develop the written curriculum at local level is often not fulfilled. Often, school-based curriculum writing is simply a matter of timetabling and sequencing. The study also found very little evidence of students' involvement in outcome-oriented curriculum design. Where consultation does involve students, this makes it possible that outcomes will be reviewed to ensure that learning outcomes are more intelligible and better responsive to learners.

Other challenges to the effectiveness and smooth running of curriculum development processes include: establishing and maintaining employers' involvement; reconciling differences of interest; ensuring that the process of writing learning outcomes is transparent and organised in such a way that all participants can understand and take part fully; ensuring coherence of the learning outcomes with the other components of the written curriculum; making sure that the development of a new curriculum does not take too long; balancing this with the need to ensure that all relevant stakeholders have a voice.

The study also explored the relationship between the written form of outcome-oriented curricula and the taught curricula, i.e. their delivery in different learning settings. The study found that it is unlikely that outcome-oriented curricula can be written in a way that is neutral with respect to teaching and learning. Throughout the case studies, it became clear that the structure of learning outcomes and the way in which they were written were influencing the teaching and learning process. For example, some curricula separated learning outcomes relating to theory and practice – this is, for instance, the case of the English national vocational qualification (NVQ) – while others combined them (for example, the German concept of learning fields), and this had an impact on assessment and teaching.

It was also found that the level of detail of the learning outcomes used in curricula may have important implications for teaching methods and for learners' assessment. A high level of prescription may increase the reliability of assessment and the consistency of teaching and, accordingly, help to ensure that VET provision reflects the competences required more accurately. However, a high level of prescription may also have negative effects, leading to excessive complexity, overly instrumental approaches to teaching and learning (reduced teacher autonomy) and a lack of relevance for particular learners and employers by reducing responsibility for tailoring at local level.

As a result, the impact of written curricula on teaching and learning depends not only on which learning outcomes are included but also on how they are grouped and how they connect to other material in the curriculum, including assessment criteria, content, pedagogical guidance, etc. The study found that outcome-oriented curricula across Europe vary in the extent of pedagogical guidance that they provide, distinguishing between outcome-oriented curricula that incorporate low, intermediate and high levels of pedagogical guidance. However, even without explicit pedagogical guidance, an outcome-oriented curriculum may still act to reinforce existing pedagogies or encourage pedagogical change, for example through new assessment demands. Often, pedagogical guidance is available through separate publications (e.g. in Croatia) or through professional development programmes (e.g. in Germany). The character of assessment methods in combination with the written curriculum was found to affect teaching and learning behaviour (e.g. in Finland).

The study also made an attempt to establish a relationship between outcome-oriented curricula and learner-centred pedagogies and inclusive teaching and learning practices. It should be recalled that the study focused on the analysis of reformed, newly introduced curricula, so it was attempting to identify the nature and extent of any effects on the taught curriculum within a

comparatively short time frame. It is also worth emphasising that the sample collected for this study is limited – 25 teaching and training institutions were visited in 14 countries – and that the institutions selected are unlikely to be representative of all institutions teaching a particular programme. Extreme caution must therefore be exercised in generalising across case studies.

In this connection, across the 15 case studies researched, the study found the relationship between outcome-oriented written and taught curricula to be complex. The research did not point to a straightforward relationship between the development of a stronger outcomes orientation within written curricula and in the teaching and learning processes, since pedagogy is influenced by many factors outside the written curriculum (e.g. the professional experience and attitudes of teachers, the degree of autonomy they enjoy, the way the learning environment is structured, the characteristics and needs of the learners, the available financial and human resources and infrastructure, the distinctive institutional characteristics, etc.). However, outcome-oriented curricula were found to promote learner-centred pedagogies, as these are often articulated in detail in written curricula (e.g. in Romania) and are applied in many of the schools visited (e.g. through project work, group learning, simulations, role play, independent study and problem-solving, etc.).

The quality and character of learning environments and materials were identified by teachers to be critical for the delivery of outcome-oriented curricula, although this was often expressed in terms of not having adequate learning materials or the right mix of learning environments and, in particular, not having the necessary access to laboratories, kitchens (in the case of tourism curricula) or workshops. Accordingly, teaching activities often had to be planned on the basis of these realities. In some cases, teachers developed their own material to teach the new curriculum. In other cases, work-like environments were developed to provide a real work setting (e.g. in Romania and Ireland).

The interviews with policy-makers pointed out that, while national policies have focused mainly on reforms to the written curriculum, comparatively little consideration has been given to how new curricula might affect teaching and learning and what types of pedagogies might best support outcome-oriented curricula. Instead, a plethora of learner-centred pedagogies are emerging from professional circles and communities.

The research paper concludes by addressing issues for policy consideration and areas that require further development to ensure that outcome-oriented curricula make the most of their potential for improving teaching and learning processes in initial VET:

- (a) the extent to which the curriculum design process is both genuinely responsive and representative of different interests requires periodical reviews of the way in which different stages of the curriculum design process work together (or not) with particular regard to the translation of competences into learning outcomes;
- (b) the writing and structuring of learning outcomes in written curricula may become an increasingly technical exercise. The provision of sufficient expertise should be an issue of concern for education and training authorities, and written curricula must remain intelligible to all stakeholders – including the social partners, students and teachers – who need to understand and help shape them;
- (c) there is, in general, a need for a more effective feedback mechanism for curriculum design and implementation. In particular, those who participate in curriculum design should understand how curriculum design decisions have an impact (or have little or no impact) on teaching and assessment so that design decisions may be based on realistic expectations. Therefore, outcome-oriented curriculum reform needs to be balanced with greater consideration of the taught curriculum. The implementation of outcome-oriented curricula should be carefully monitored and reviewed to ensure that these curricula deliver their intended goals;
- (d) the extent to which greater responsibility can be given to the development of the curriculum and cooperation between schools and stakeholders at local level is a key issue in curriculum design. The capacity of participants at local level to engage in curriculum design is highly variable. Schools and colleges could benefit from giving consideration to how to engage employers in the process and, in some cases, from sharing examples of effective practice. Equally, local providers would benefit from national/regional support to develop their capacity. The position of students in relation to learning outcomes also deserves more attention;
- (e) the establishment of links between the development and implementation of outcome-oriented curricula and the encouragement of learner-centred pedagogies is crucial. To this end, it would be valuable to investigate how specific pedagogies may support outcome-oriented curricula, for example: self-directed learning, including the use of online resources; peer learning; creative approaches to learning; work-based and work-related learning, etc.;
- (f) outcome-oriented curricula should improve inclusiveness in teaching and learning and educational inclusion in the sense of widening access, encouraging people to go on to further studies and extending participation, thereby achieving equitable learning outcomes for all students. This is

particularly important at a time when many European countries are facing high rates of early school leaving (European Commission, 2011a). Early school leaving has significant economic and social consequences not only for young people themselves but also for the economy and society as a whole. Previous Cedefop research (2010a and 2011b) has shown how learning-outcomes approaches to curriculum design and implementation make curricula in initial VET more inclusive and more motivating for learners (e.g. in Lithuania, Malta, the Netherlands and Finland). In Finland, there is evidence that learners understand better what is expected of them, feel more committed and participate more in the learning and assessment process. In Slovenia, links between theoretical and practical learning are seen as much stronger under the learning outcome-based curricula.

To conclude, continuous renewal and reform of VET are important for Europe to prepare lifelong learners and employable citizens. In this process, curriculum reform and updating are pivotal. One important challenge remains: how can we better coordinate and govern outcome-oriented curriculum reform so as to ensure quality, relevance and inclusion in education and training.

CHAPTER 1.

Curriculum change on the basis of learning outcomes

1.1. Introduction: the European policy and research context

This Cedefop report concerns the design and delivery of outcome-oriented curricula in IVET in Europe. There has been considerable activity over the past decade to reform curricula linked to a variety of national and European goals aimed at improving the contribution that IVET can make to economic and social progress (Council of the EU, 2010). An important driver of these reforms has been the attempt to focus more explicitly on the outcomes of education and training to ensure a better fit between the knowledge, skills and competence acquired by young people in upper secondary education and the needs of business.

The underlying principle is that, by focusing on outcomes, the flow of new entrants to the labour market will be much more geared to meeting its needs. This is because outcomes orientation has the potential to improve the way in which education and training systems and the labour market are linked. Curricula play a central role in this process, as they provide a means by which learning outcomes acquired in learning processes can 'communicate' more effectively with the competences required in the labour market.

In many European countries, these developments have been supported or inspired by European policies and tools. The recommendations of the European Parliament and of the Council on *Key competences for lifelong learning* (2006) and the *European qualifications framework* (2008) have been particularly influential at national level. In 2009, Education and Training 2020 emphasised the importance of curriculum reform and renewal in promoting outcome-oriented approaches and key competences, establishing as a strategic objective 'to take greater account of transversal key competences in curricula, assessment and qualifications'. Curriculum design, teaching, assessment and learning environments should be consistently based on learning outcomes, and particular emphasis should be placed on those transversal competences that require cross-curricular and innovative methods. Later, the Council conclusions of 26 November 2009 on developing the role of education in a fully-functioning knowledge triangle (education, research and innovation) encouraged education

and training institutions to accelerate the pace of pedagogical reforms so as to ensure that curricula, as well as teaching and examination methods at all levels of education, incorporate and promote transversal key competences. Efforts should also be made to ensure that teachers and trainers are equipped with appropriate pedagogical and other skills.

The Commission communication *Europe 2020* on the European strategy for smart, sustainable and inclusive growth puts forward seven flagship initiatives, two of which are very closely connected with modernising curricula: the ‘innovation union’ and an ‘agenda for new skills and jobs’. In the former, the Commission calls on Member States to ensure a sufficient supply of science, maths and engineering graduates and to focus school curricula on creativity, innovation, and entrepreneurship; in the latter, Member States are asked to ensure that the competences required to engage in further learning and the labour market are acquired and recognised throughout general, vocational, higher and adult education, including non-formal and informal learning.

Cedefop has supported this process and these policy priorities through its research work on learning outcomes in curriculum design, qualifications, standards and quality assurance (Cedefop, 2008a; Cedefop, 2008b; Cedefop, 2009a; Cedefop, 2009b; Cedefop, 2009c; Cedefop, 2010a).

While there is a growing body of research literature on the form and function of outcome-oriented curricula in general, the specific nature of their manifestation in initial vocational education and training in Europe has, to date, been subject to less attention. Research, moreover, has been undertaken in a variety of domains and from a variety of perspectives. Much of this research has sought to clarify what is meant by terms such as ‘competence’ and ‘outcomes’. Discussions revolving around these notions have taken place in different countries at different times and have had an impact to varying degrees. Although Germany has long-standing and well-developed concepts of competence which underpin its unique emphasis on occupational identity (*Beruf*), it may be argued that this unique concept has had comparatively little influence outside German-speaking nations (Gehrmlich, 2009; Brockmann and Winch, 2011). The development in the 1980s of the explicitly outcome-oriented system of initial vocational qualifications (NVQ) in the United Kingdom has, perhaps, been more influential (Burke, 1995). Despite being the subject of much criticism, the United Kingdom’s approach has provided a model for other countries, both in Europe and beyond, albeit not always with great success (Allais, 2012). Conceptual work has also been a feature of developments in France during the 1990s which have underpinned progress within its education and training systems and are now helping to combine the concepts of competence and learning outcomes (Le Deist, 2009).

Recent comparative research has tended to focus on attempts to understand the precise differences in meaning attributed to terms such as competence and outcomes and to shed light on the underlying causes and consequences. Work by Winterton (2009), for example, has examined the ways in which competence and learning outcomes are understood in some European countries and has sought to develop a generalised typology. Markowitsch and Luomi-Messerer (2008) have unpacked these concepts in the light of the development of the European qualifications framework. The Cedefop study of nine European countries published in 2010 deepened our understanding by undertaking a comparative analysis of how learning outcomes approaches were understood and their relationship to curricula in different contexts (Cedefop, 2010a).

This body of research has undoubtedly furthered our understanding of the nature and extent of the conceptual differences underlying the concept of 'outcomes'. At the same time, with the exception of the Cedefop study on *Learning outcome approaches in VET curricula: a comparative analysis of nine European countries* (Cedefop 2010a), this research has not focused on the relationship between learning outcomes/competences and curriculum policies and developments. This report seeks to shed light on these developments by building on, updating and expanding the previous work undertaken by Cedefop.

1.2. Outline of the report

The report is structured in such a way as to reflect the curriculum design and implementation process by distinguishing between three stages: development of curriculum policy, design of the written curriculum and delivery of the taught curriculum. The report shows how these three stages are interdependent.

After this brief introduction in Chapter 1, Chapter 2 presents the methods and tools used to carry out the research, as well as the challenges and limitations encountered in the process of conducting a large-scale comparative analysis. Chapter 3 establishes a conceptual basis for the study and discusses both the key concepts underlying this report and the cross-border differences found in this research in understanding terms such as 'competence' and 'learning outcomes' in Europe.

The discussion on policy development begins in Chapter 4, which examines the extent to which IVET policies in Europe are concerned with outcome-oriented curricula and the motivation behind such reforms.

Chapter 5 then examines the implications of policy for curriculum design and highlights the different ways in which outcomes are incorporated into design processes in the various countries. Chapter 6 presents the actors involved in the

curriculum development process; their role and function are discussed together with the contribution of working groups, consultation processes and governance arrangements. The role of curriculum design experts and vocational schools is particularly emphasised. The challenges of the curriculum design process are discussed and illustrated with national examples. Chapter 7 analyses the form of learning outcomes in the written curriculum and their function in guiding teaching and learning. It explains how learning outcomes are combined with other components of the curriculum to ensure consistency and improve links between the various standards. It examines how learning outcomes address key competences and generic skills. The chapter also explores the relationship of outcome-oriented curricula to pedagogic guidance.

Delivery of the taught curriculum is discussed in Chapter 8, which presents the influence of the written curriculum on the taught curriculum, in particular on teaching styles and learning materials. It considers the way in which the granularity of learning outcomes in written curricula may affect pedagogy. It presents teaching styles and learning environments used to deliver the selected outcome-oriented curricula and seeks evidence of how these may contribute to the successful delivery of outcome-oriented curricula.

Chapter 9 considers the extent to which outcome-oriented curricula may promote learner-centredness and inclusion in teaching and learning processes.

Each of the chapters concludes with key findings, while the overall conclusions drawn and issues identified for consideration by policy-makers, practitioners and researchers at national and European levels are presented in Chapter 10.

CHAPTER 2.

Study scope and methodology

2.1. Research questions

The overarching aim of this study was to provide an overview of recent policies and practices in designing and delivering outcome-oriented curricula in IVET and their potential relationship with learner-centredness and inclusiveness. To this end, three levels of analysis were established: policy development, written curricula and taught curricula. The written curriculum refers to all those documents which provide the framework for planning learning experiences, while the taught curriculum refers to the programme of teaching and learning that is undertaken by teachers and learners in specific learning environments (see definitions in Section 3.1). These three levels of analysis were translated into detailed research questions on the basis of which the research approach and the data collection tools were developed. The detailed research questions are listed below:

- (a) implications of learning outcomes approaches for curriculum development policies:
 - (i) to what extent are learning outcomes approaches being introduced into curricula in the 32 countries? What are the reasons for their introduction?
 - (ii) what are the implications of these reforms for the decision-making and curriculum development processes? What are the main similarities and differences between countries and sectors? Who is involved in these processes and how?
- (b) implications of learning outcomes approaches for components of written curricula:
 - (i) which knowledge (content or subject matter), skills and competences are emphasised in written curricula? How have these been selected, formulated and structured in the curriculum?
 - (ii) what is the degree of coherence and consistency between components of the written curriculum and stated learning outcomes?
- (c) implications of learning outcomes approaches for taught curricula (pedagogies):
 - (i) what types of teaching method are used to deliver outcome-oriented curricula in different learning environments? Have teaching methods changed as a result of the introduction of new curricula?

- (ii) how are learning environments organised or changed to ensure successful delivery of outcome-oriented curricula?
- (iii) are outcome-oriented curricula associated with learner-centredness and inclusiveness in teaching and learning processes?

2.2. Scope of the study

The study included all 32 European countries that participate in the Education and Training 2020 strategic framework ⁽³⁾ and examined national developments in IVET but with a focus on a particular qualification from two sectors: electronics and tourism. The electronics and tourism sectors were chosen to contrast manufacturing and services. To gain a better understanding of these two sectors in the countries examined, it was decided to research one sector rather than both sectors in each country. However, there were some cases, such as Croatia, Denmark, Finland and the UK (England), where both sectors were examined. One of the most important criteria for the sector allocation was the existence of explicitly outcome-oriented curricula in the given country and sector. Other considerations included finding examples of different types of IVET systems: market-led, state-regulated and transitional systems, each with a workplace/school-focused VET curriculum. The table below summarises the sector allocation for each country.

Table 1 **Sector allocation within the 32-country overview**

Electronics	Tourism
Austria, Bulgaria, Czech Republic, Estonia, Finland, France, Germany, Luxembourg, Netherlands, Norway, Poland, Slovakia, Sweden, UK (England).	Belgium, Croatia, Cyprus, Denmark, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lichtenstein, Lithuania, Malta, Portugal, Romania, Slovenia, Spain, Turkey, UK (England).

Source: Authors.

The occupations identified were used as reference points, and curricula that provided entry routes into those occupations were sought. The two occupations identified were tourist information officer and mechatronics technician. It was acknowledged that, since the focus was on international standard classification of education (ISCED) level 3 (EQF levels 3 and 4), the chosen curricula were likely to be more closely geared to an industry or set of occupations than curricula at

⁽³⁾ The 27 EU Member States, Croatia, Iceland, Liechtenstein, Norway and Turkey.

higher levels which had a tendency to be more specific. Nevertheless, curricula were chosen that allowed comparisons to be made between curricula serving the same sector in different countries and between curricula serving different sectors in different countries ⁽⁴⁾.

In practice, the structure of IVET programmes and occupations in some countries meant that it was necessary to include in the sample of curricula programmes above ISCED 3 (EQF levels 3 and 4 ⁽⁵⁾) or to select programmes geared to other occupations in the selected sectors or to closely related sectors ⁽⁶⁾. This proved beneficial, as it shed light on the relationship between outcome-oriented curricula in IVET and the rest of the education and training system.

2.3. Research tools

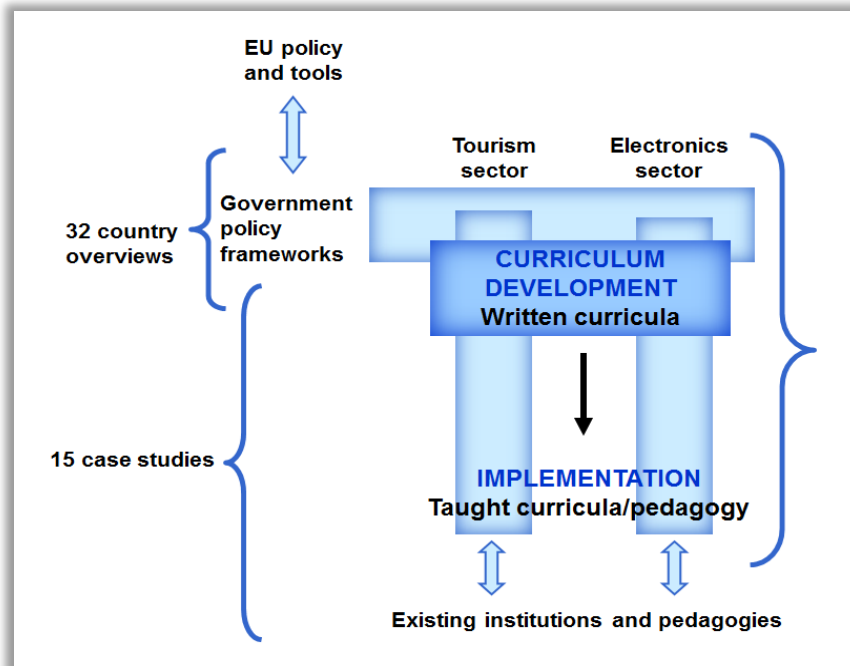
The study was divided into two phases. The first phase provided an overview of policy and curriculum developments in 32 countries. The second phase identified and focused on 15 examples of best practice. In both cases, quality was assured by systematically checking the collected information and its interpretation with selected stakeholders/national experts involved in this research. Two international workshops organised by Cedefop on curriculum innovation and reform in January 2011 and April 2012 (Cedefop, 2011a; Cedefop, 2012a) with national representatives from the countries examined and international experts have informed and enriched the research findings.

⁽⁴⁾ Some countries offer a number of curricula for the tourism and electronics/mechatronics sectors both nationally and regionally. Where there was a choice, the focus was on that curriculum which was most significant, either in terms of outcome-oriented approaches or in terms of take-up.

⁽⁵⁾ Countries where higher-level qualifications were researched: Belgium (tourism, level 4), Hungary (tourism, level 4), Spain (tourism, level 5) and the UK (England) (tourism, level 4).

⁽⁶⁾ In Austria, engineering; in Ireland, professional cookery; in Cyprus, Greece, Iceland, Malta and Sweden, it was difficult to examine particular outcome-oriented curricula, as they were at the development stage; however, it was possible to investigate the development of outcome-oriented curricula in IVET more broadly.

Figure 1 Visual summary of the research design



Source: Authors.

2.3.1. Country overviews

The country reviews were prepared on the basis of a literature review and 82 semi-structured interviews conducted between March and October 2011 with key stakeholders in each of the countries examined (e.g. with curriculum agency staff, the social partners, sector representatives, teachers, professional bodies and researchers).

To handle and analyse the data set, two analytical frameworks were developed. The first framework analysed the data in relation to national characteristics: for example, the maturity of policy, the extent of centralisation and the structure of the VET system. The second framework analysed the data in relation to characteristics of the curricula in the participating countries: for example, the integration and granularity of learning outcomes (see Section 5.2). The analysis has informed the selection of case studies and the formulation of more detailed research questions.

2.3.2. Case studies

The purpose of the 15 case studies was to identify best practice in how strategies and policies in designing outcome-oriented curricula are being implemented in different learning environments. The analysis identified and described those factors that determine the success of delivering an outcome-oriented curriculum

and benefit learners in terms of inclusiveness and learner-centredness. The examples of best practice supported the development of recommendations for policy-makers and practitioners and were used for the identification of future research needs.

On this basis, 15 case studies were identified in 14 countries. The table below lists the countries, the sectors and the names of the selected qualifications together with their ISCED level.

Table 2 **Case studies**

Case study country	Sector	Name of qualification	ISCED ⁽⁷⁾ level of qualification
Croatia	Tourism	Tourism and hospitality	Level 3
Denmark	Electronics	Industrial engineering training	Level 3
Finland	Tourism	Qualification in tourism sales and information services, travel counsellor	Level 3
France	Electronics	Electronic and digital systems (Baccalauréat professionnel SEN)	Level 3
Germany	Electronics	Mechatronics	Level 3
Hungary	Tourism	Travel adviser	Level 4
Ireland	Tourism	Traineeship in professional cookery	Level 3
Norway	Electronics	Production electronics	Level 3
Poland	Electronics	Mechatronics	Level 3
Romania	Tourism	Technician in tourism	Level 3
Slovakia	Electronics	State educational programme for courses 23 and 24; engineering and other metal-processing production	Level 3
Slovenia	Tourism	Gastronomy and tourism	Level 3
Spain	Tourism	Higher technical tourist guide, information and assistance	Level 5B
UK (England)	Tourism	Certificate in travel services	Level 3
UK (England)	Electronics	Advanced diploma in engineering	Level 3

Source: Authors.

Each case study is based on five days of fieldwork. The interviewees included policy-makers and experts from national curriculum agencies, those representing the employment sector involved in the curricula and other stakeholders who had contributed to the curriculum generation process, for

⁽⁷⁾ ISCED levels are those supplied by the appropriate authority in each country in 2011.

example, experts who had played a role in formally defining assessment criteria, persons involved in professional development and teacher training, etc. (see Annex 1, list of interviewees).

All of the case studies, except one (travel services in the UK (England)), included visits to schools or training institutions. In some cases, observation of teaching and learning and participation in training sessions was also possible. In total, 25 vocational schools and colleges were visited, and 237 interviews ⁽⁸⁾ were conducted. At the level of implementation, interviews were conducted with school or enterprise-based curriculum managers, teachers/trainers and students who had first-hand experience of the curriculum in question. Interviews with teachers and students showed how the implementation of outcome-oriented curricula was experienced and evaluated by key actors.

2.4. Challenges and limitations of the research

There have been many challenges and methodological difficulties involved in conducting a review of 32 countries and researching 15 case studies, some of which are presented throughout this report.

Language and multiple definitions of terminology posed challenges both in the interpretation of documents and literature and during the conduct of interviews. Many terms, such as learning outcome, competence, objective, inclusion, curriculum, qualification and occupational standards are used differently in the different countries. Sometimes, the same term exists in several countries, such as competence, *Kompetenz*, *kompetencia*, etc., with a different meaning. In some countries, this may reflect the fact that a foreign word has been translated into the national language but has not yet come into general use. Often, interviewees from the same country used the term with a different meaning or the same interviewee used a term inconsistently during an interview. This led to the development of a working terminology to allow comparability (see Section 3.3 for the cross-border differences of meanings). The development of a clear conceptual framework for the study was of paramount importance.

Another challenge has been the identification of individuals who have detailed knowledge of curriculum development in relation to particular occupational sectors (tourism and electronics) and who also have an understanding of learning outcomes. Furthermore, as good institutional memory is not always a given in all countries, it has not always been easy or possible to

⁽⁸⁾ Interviews were conducted with 28 experts, 25 stakeholders, 72 teachers and school leaders and 112 learners.

obtain information that allowed judgments to be made about how outcome-oriented approaches had been developing over time and what difference they were making.

An associated problem was that, in many countries, there had been an ongoing process of re-writing curricula into a new, outcome-based format. In Malta and Cyprus, for example, a major reform of the VET system is under way, but it is still at a relatively early stage. In Ireland, this process is working up from Irish NQF level 1 through to level 6 and has currently reached only Irish level 3 (equivalent to ISCED level 1) for most qualifications. In Austria, although higher-level curricula are being written, a higher-level curriculum for electronics has not yet been introduced. In the United Kingdom (England), modified and unmodified versions of curricula relating to tourism are running side by side. In these countries, the aim was to investigate the new processes of curriculum writing and policy developments, even if these cannot yet be fully explored in the tourism and electronics sectors.

CHAPTER 3.

Concepts underlying the research

As mentioned above, many of the key terms used in this study have diverse and contested meanings. For example, terms such as learning outcomes and curricula are often defined in relation to other contested concepts (such as competence-based or outcome-oriented approach). Moreover, there is significant diversity in how these terms are used and understood not only in research literature but also among practitioners and policy-makers across Europe. This section summarises the understandings of key terms by the interviewees and then sets out how they are used in this research paper.

3.1. What is the ‘written curriculum’? What is the ‘taught curriculum’?

Cedefop (2010a) provides a selective review of the variety of ways in which the term curriculum has been understood at different times and in different cultures. In particular, curriculum may be understood to be:

- (a) a description of a body of knowledge or of a set of skills;
- (b) a plan of teaching and learning;
- (c) an agreed standard or contract – a binding or normative standard that authorises and regulates teaching and learning;
- (d) the experience of learners over time.

Depending on the scope of the research, curriculum may be defined in terms of one, some or all of these dimensions. In Cedefop’s research paper: *Learning outcomes approaches in VET curricula*, curriculum is defined as any written document that regulates or directs the planning of learning experiences: ‘A curriculum is a normative document (or a collection of documents) setting the framework for planning learning experiences’ (Cedefop, 2010a, p. 20).

This implies that a curriculum incorporates all kinds of elements: ‘Depending on the country, the type of education and training, and the institution, curricula may define [...] learning outcomes, objectives, contents, place and duration of learning, teaching and assessment methods to a greater or to a lesser extent’ (Cedefop, 2010a, p. 20).

According to this definition, any document that serves as (part of) the framework for planning learning experiences counts as a curriculum, including documents relating to qualification, assessment and guidance. This is a broad

and inclusive definition of 'written curriculum' and it is the one adopted for the purposes of this study.

Cedefop distinguishes the term learning programme from the term curriculum: 'The learning programme is a written document planning learning experiences in a specific learning setting. It is developed on the basis of the curriculum and takes into account the learners' needs' (Cedefop, 2010a, p. 27).

According to the current definition, although the learning programme is part of the written curriculum, it is distinguished by the fact that it serves to plan the curriculum for a particular group of learners in a given learning setting.

In this study, the above definitions of curriculum and of learning programme have been used. It is useful to use the term written curriculum to refer to all those documents which provide the framework for planning learning experiences.

This study is concerned with the taught curriculum as well as the written curriculum. By taught curriculum, we mean the programme of teaching and learning that is undertaken by teachers and learners in specific environments (see Figure 1). The taught curriculum consists of behaviours, relationships and experiences; it cannot be researched in the same way as documentary evidence. Furthermore, while the study is particularly interested in the manner in which the written curriculum guides the taught curriculum, the latter is not conceptualised as simply the expression of the former; it is evident that other factors will influence the character of the taught curriculum, for example institutional culture.

Curriculum development refers to the processes by which curriculum documents are generated and then implemented. As is subsequently demonstrated, it is helpful to imagine these processes as collectively forming part of a larger mission and, accordingly, to conceptualise the curriculum not only in terms of its function as a written document but also in terms of how it is created. This emphasis on process may make it easier to understand how outcome-oriented approaches are developing over time and between countries. 'Curriculum development' focuses on the procedures and stakeholder roles that lead to curricula documents taking their form. Just as significant for the form and function of the curriculum is who is involved and how. For example, curriculum documentation in one country may systematically exclude any explicit pedagogical guidance; however, such guidance may be provided through official sources such as the schools inspectorate or teachers' handbooks. The important point, in such cases, is not the documentary form that such prescriptions take but who is doing the prescribing and according to what criteria.

3.2. What are 'learning outcomes' in VET curricula?

The research literature on learning outcomes is extensive, and we cannot cover it here in its entirety (see Cedefop 2008a; Cedefop, 2008b; Cedefop, 2009a; Cedefop, 2009b; Cedefop, 2009c; Cedefop, 2010a; Winterton 2009; Werquin, 2012). For the purposes of this study, it is helpful to identify some of the main messages from this literature.

The shift to learning outcomes (Cedefop 2009a) sets out the different ways in which learning outcomes are used. In particular, they are used at various levels to:

- (a) characterise (at systemic level) overall aims for education and training;
- (b) express the requirements or standards set by qualifications;
- (c) clarify the intentions of curricula and learning programmes.

Furthermore, depending on the level at which they are used, learning outcomes serve a variety of purposes:

- (a) to recognise prior learning;
- (b) to award credit;
- (c) to ensure quality;
- (d) to improve credibility;
- (e) to increase transparency (Cedefop 2009a, p. 10).

In this study, our main focus is on the use of learning outcomes to inform the writing and implementation of IVET curricula. It follows that we are interested in analysing the way in which learning outcomes have shaped curricula and learning programmes. In particular, learning outcomes are a distinctive way of expressing what learners should gain from their learning programmes. This apparently straightforward statement conceals some more contentious claims about the use of learning outcomes:

- (a) it implies a particular focus on what skills, knowledge and attributes a learner should acquire;
- (b) it implies, at the very least, a rebalancing of emphasis from inputs to outputs in VET and, at the very most, the complete omission of normative descriptions of inputs;
- (c) it makes a claim to validity, for example, that a set of learning outcomes are warranted because they correspond to a set of workplace performances or competences.

In practice, the restatement of learning outcomes in a series of different documents (qualifications, curricula, learning programmes) helps us to reinterpret them so that descriptors rooted in the world of work are adapted to the cultural and institutional characteristics of the education and training system. We can distinguish the formative role that learning outcomes play in the design of

curricula from the instructional role that they play in guiding teachers about what they should teach. This research explores both of these functions.

3.2.1. Focusing on the outcomes of learning

The distinctive feature of learning outcomes approaches is that the curriculum is described in terms of what the learner will be able to do at the end of his or her course of study rather than in terms of objectives, processes, knowledge or other traditional curricular elements (Cedefop, 2010a; Werquin, 2012). This emphasis on performance – which may include skills, knowledge and other abilities – implies a distinctive standard by which training and education should be judged and, usually, a particular emphasis on the manner in which learning outcomes may be assessed.

An emphasis on the consequences of learning may go hand in hand with a behaviouristic understanding of learning outcomes, namely that learning outcomes always have the character of observable performances. According to Winterton (2009), a behaviourist approach was favoured by the writers responsible for developing learning outcomes approaches in the 1960s. This approach was influential in the design of the English NVQs – which describe the outcomes of learning in terms of a list of testable performances in particular situations (Hyland, 1994). However, the authentic NVQ approach (now widely criticised) is something of an exception in practice. Even in the UK (England), NVQs form only part of the apprenticeship framework where they are combined with other qualifications and other types of vocational qualification, such as national diplomas ⁽⁹⁾, that compete with NVQs, particularly in IVET.

Contemporary accounts of learning outcomes emphasise their diversity and suggest that, where learning outcomes are tacit, context-bound or applied in combination with one another, then inferential rather than behaviouristic approaches will be more appropriate (Cedefop, 2010a). Learning outcomes are no longer conceptualised as self-evident performances.

3.2.2. Defining the inputs and outcomes of learning

Some authors claim that a distinctive feature of the outcome-oriented approach is the omission of inputs (Werquin, 2012). It is argued that, traditionally, qualifications and curricula were articulated in terms of inputs: objectives, content, disciplines, durations, activities, etc. Consequently, an outcome-oriented approach not only places the focus on the outcomes for learners, but it also tacitly ignores the inputs. It implies that outputs must be determined first;

⁽⁹⁾ National BTEC awards are issued by the awarding organisation Edexcel.

subsequently, the inputs may be selected which will serve to achieve those outcomes in the most efficient and equitable manner.

This interpretation is sometimes associated with a managerial attitude towards the teaching role. Consequently, the outcome-oriented approach empowers teachers and trainers because the curriculum has been defined in terms of final performances and the teacher or trainer can be given autonomy to determine the best way to achieve these performances. However, this claim must be interpreted with caution. In practice, there may be other constraints on teachers' and trainers' behaviour; furthermore, the managerial interpretation may be contested by teachers who, in the past, have been able to shape the curriculum directly (Pollard, 2010).

More generally, the omission of inputs implies a separation of the process of determining outcomes from the process of determining inputs. If outcomes are judged to have priority, it follows that they must be determined first. This would imply a differentiation between the process of setting the learning outcomes and the process of setting the learning inputs. This research paper explores how some countries have sought to design and differentiate these processes, taking into account procedures, agents and governance. In this paper, the research builds on previous Cedefop findings (2010a, p. 64) which consider a range of outcome-oriented curricula that place considerable emphasis on the specification of inputs (e.g. in France, curricula include many binding rules on learning arrangements) and concludes that curricula are always mixed (e.g. in Germany, where there is still a close connection between the definition of inputs and outcomes).

3.2.3. Basing learning outcomes upon competences

Markowitsch and Paimauer (2009) have explored the international classification of 'competence' and of 'learning outcomes'. In the EQF, 'learning outcomes' are defined as statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined as knowledge, skills and competences (European Parliament and Council of the EU, 2008, Annex 2). In this definition, 'competence' is understood as a special capability which is not fully captured as knowledge or skill. 'Competence', in this sense, is understood to refer to autonomy and responsibility, values and attitudes.

However, 'competence' is also understood to include descriptions of work-based or social capabilities that are exercised in the workplace or in society. Formally in VET, they are discovered and defined by research and/or consultation. If we investigate occupational standards activity in many European countries, we find that processes have been designed systematically to describe

the tasks, roles and responsibilities that will be carried out within an occupation, such as a tourist information officer. These processes result in what is usually called a set of 'competences' (sometimes called a professional profile).

In contrast, a learning outcome is a statement of what should be learnt or what the learner will know or be able to do. Learning outcomes are situated within an educational context, for example, a qualification document or a curriculum document. It is an essential feature of using learning outcomes in curriculum design that learning outcomes are validated by their relationship with competences, that is with practices in the workplace (or society). This may make it seem as though learning outcomes directly refer to practices in the real world. It may also appear as though the terms 'learning outcome' and 'competence' are interchangeable. It must be conceded that, in practice, the terms are used interchangeably by many practitioners in many countries. However, it is helpful to make a distinction between the two terms. Competences usually refer to practices in the workplace and, by extension, to wider social and personal practices. Learning outcomes refer not directly to work practices but to competences. Accordingly, learning outcomes are validated by their connection to competences which are understood as part of the world of work (as their source), and they are given value (in the labour market) by their connection to competences which are understood as part of the employment market (as their destination) ⁽¹⁰⁾.

The relationship between learning outcomes and competences is a critical one. The achievement of this relationship in institutional arrangements and procedures has developed differently in different countries, as will be described in the following section. Nevertheless, all outcome-oriented curriculum approaches establish some systematic way of identifying competences and translating them into learning outcomes. As we shall see, the language of this translation varies, as does the practice and the institutional form. Furthermore, the extent of the transformation and the manner in which it is perceived also vary. However, despite all of these caveats, the evolution of outcome-oriented approaches has advanced sufficiently, across so many European countries, that it is possible to sustain this distinction in this research paper.

The conceptual separation of learning outcomes and competences allows us to see that learning outcomes can communicate between the status quo of competences in the world of work and competences (specific to individuals) that enter the employment market in the future.

⁽¹⁰⁾ In many of the IVET case studies, we have found that learning outcomes also serve to trace competences that are situated in traditional subjects or in new educational agendas, such as citizenship.

3.3. Cross-border differences in the meaning of 'competence' and 'learning outcomes'

This section considers the extent of variation in meaning attached to the above terms from the empirical evidence, and discusses whether and in what way the variations observed have an impact on the conceptualisation and definition of learning outcomes in curricula.

An overview of all 32 countries examined shows that, despite the variation, there is quite a narrow range of ways in which the terms are used, although the situation is complicated by the fact that the relationship between competence and learning outcomes is defined in some countries (e.g. Portugal) and not in others (e.g. Norway). Moreover, some countries do not officially use the label of 'learning outcomes' to any great extent (e.g. Bulgaria), while others eschew the term 'competence' (e.g. Sweden). The situation is made considerably more complex by the fact that, while national administrations often offer definitions of terms, there may be little adherence to strict definitions in policy and practice. In Poland, the term competence is used in a variety of ways in practice, whereas the EU definition is used in all official documents.

The question arises, therefore, as to whether there are conceptual differences embodied in the use of different words which are significant for the form and function of learning outcomes. Winterton (2009), among others, has expounded the hypothesis that Europe exhibits a variety of models of competence which are related to underlying training and labour market regimes ⁽¹¹⁾. However, it is apparent from this research that the number of countries with a model of competence which is well developed, commonly understood, widely shared and deeply embedded in the culture and practice of VET is quite small. Such models, like the English, French and German models discussed by Winterton, have existed for some time and were developed as endogenous policies to fulfil purposes inherent to their education and training systems and labour markets ⁽¹²⁾. However, these may be special cases. Certainly, in the German case, the importance of vocational competence (*Handlungskompetenz* and the related *berufliche Handlungsfähigkeit*) for individual and social identity is quite exceptional. In most countries, the concept of learning outcomes is not so well developed or widely shared. In many cases, the concepts have been

⁽¹¹⁾ It should also be noted that such analyses fail to differentiate adequately between IVET and CVET, despite their differences. It is likely that differences in conceptualisation of competence are less significant in IVET than in CVET owing to its relationship to mainstream education.

⁽¹²⁾ Although it is notable that, in the UK, there appears to be less consensus, particularly in recent years.

imported from elsewhere (the EU, in particular the United Kingdom, being the most common source) and are at various stages of being adapted and interpreted to achieve national goals in education and training policy and practice.

Furthermore, the question remains as to whether differences in conceptualisation are significant. Certainly, Winterton's analysis suggests so in the countries he studied, as do Brockmann, Clarke and Winch in their comparative study (2011). As Cedefop notes, 'the term [learning outcomes] can have a range of connotations and denotations (...) because it is used in different contexts' (Cedefop, 2009a). Equally, 'the terms competence, *compétence* and *Kompetenz* each have rather different connotations in their respective language and cultural traditions' (ibid.). 'Learning outcomes are best understood as a collection of useful processes and tools that can be applied in diverse ways in different policy, teaching and learning settings' (ibid.). However, conceptualisations in individual countries are, by no means, static or monolithic; there is evidence of policy learning, for example, in Germany and the UK (England and Scotland) and, of course, of the influence of the EU as a whole. Furthermore, despite differences in institutions and ideas, policy-makers across Europe appear, to some degree, to be confronting similar problems.

Equally, the structure of learning outcomes shows significant variation between countries in their level of detail and the relationship that they forge between technical and key competences. Most of this variation, however, does not appear to be explicable by differences in conceptualisation of competence or learning outcomes *per se*. Instead, they relate to underlying features of the education and labour market systems. Accordingly, It seems possible that underlying regimes may, in a comparatively small number of countries, give rise to well-developed conceptualisations which accompany and support variations in the structure of learning outcomes in curricula; in other countries, the structure of learning outcomes is not so dependent on well-developed and shared concepts. The latter may be especially true in countries which have imported concepts of competence and learning outcomes via EU tools, such as many central and eastern European countries. Other countries, especially the Nordics, do not have a highly distinctive concept of competence as a bridge between IVET and the labour market. Instead, the concept of competence in Scandinavian countries is subordinated to a distinctive and widely accepted concept of the function of education. As will be seen later in this research paper, this may support holistic concepts of outcomes.

CHAPTER 4.

Prevalence and impact of learning outcomes in curriculum reform

4.1. Introduction

This chapter examines curriculum policy developments geared towards learning outcomes at national and sectoral levels in the electronics and tourism sectors. It discusses the progress made in 32 countries and the reasons why curriculum change focuses on learning outcomes. On the basis of a review that situates different outcome-oriented approaches to curriculum development in their wider policy frameworks, this chapter considers the challenges facing policy-making and draws on key findings.

4.2. Curriculum policy developments in initial VET

Evidence from the 32 country reviews shows that, during the past 5 to 10 years, all European countries have implemented some kind of reform of the curriculum in IVET. In general, such reforms have been undertaken to increase the labour market relevance of IVET curricula and also to enhance their flexibility. The reforms have also been part of changes to the distribution of responsibilities within education and training systems which have changed the relationship between national (or regional) governments (depending on the overall governance arrangements), local municipalities and schools. Learning outcomes are seriously affected by these developments. At the same time, judgments about the extent to which outcome-oriented curricula for IVET have been developed in different countries are not easy to be made, as a number of issues need to be taken into account.

First, VET curricula have always been outcome-focused to some degree, otherwise they would not have been fit for purpose in the labour market. However, the pace of labour market change means that curricula are likely to need updating more frequently than in the past, with occupations emerging or changing at unprecedented rates. Historically, concepts of competence have developed as tools to understand and adjust curricula. This historical context means that it can be quite difficult to trace the origins of outcome-oriented curricula to a particular point. Further, while competence concepts have been used for quite a long time, the use of the concept of learning outcomes in

European curricula is comparatively recent. They have a specific meaning in a specific place at a specific time. In Europe, learning outcomes are, in most countries, associated with EU tools, most notably the EQF, perhaps because they serve a clear purpose in relation to these tools and because a clear definition of learning outcomes is available. What is interesting is the interaction between notions of competence and learning outcomes. Some countries have adopted and used the EU concept of learning outcomes *verbatim* (as discussed in Section 3.3); some have sought to accommodate it within or alongside developed concepts of competence.

Second, there are several countries which have had competence-based approaches for a number of years but have not introduced them into IVET; instead, some countries (such as Spain) demonstrated features relating to adult and continuing training. They do, nonetheless, have significance, as they have helped to develop considerations concerning outcomes orientation which have been geared towards IVET curricula in more recent years. In other countries, such as Germany or France, competence-based IVET curricula have been a reality for years now, but approaches and concepts continue to evolve as a result of more recent reforms;

Third, it is very difficult to ascertain whether and to what extent learning outcomes have been introduced into curricula in a meaningful way or whether this, to date, has been more or less a paper exercise. This situation is exacerbated by the fact that a key trend has been to devolve responsibility for curricula to local levels. An example may be drawn from the Netherlands where a note of caution has been sounded about embedding key competences in VET programmes: 'As yet, there is insufficient insight into the exact casting of this structure into curricula developed by schools, so that it is not clear whether extra efforts are needed in this respect' (Cedefop ReferNet Netherlands, 2010).

Finally, there is not yet a common benchmark or reference point against which to judge progress, since interpretations of learning outcomes and competences vary among countries and types of VET in Europe.

Countries have different starting points in terms of their cultures, institutions and practices. As a result, they have interpreted the outcome-oriented approach differently and set about reform in different ways. It follows that we can study the development of learning outcomes approaches both as a progression (e.g. learning outcomes are used more systematically and with greater sophistication) and as a process of embedding (e.g. learning outcomes are reconciled with national understandings, institutions and practices). Some countries which one might have regarded as being more advanced in terms of their conceptualisation of competence have not necessarily kept pace with other countries in the

development of outcome-oriented curricula. Indeed, Germany, Austria and, to some degree, Denmark, which have a very distinctive, long-standing, and well-developed notion of competence, have required long processes to incorporate the current notion of learning outcomes, as defined in EU policy, into their own. Countries which have found in the EU tools a ready-made set of concepts and measures for bringing about major reforms in their IVET systems might well overtake other countries in terms of outcome-oriented curricula.

Although dating the introduction of outcome-oriented curriculum development is difficult, the study identified the following two groups of countries: the early developers and the recent developers.

4.2.1. Early developers

Somewhat less than half of the countries examined where the introduction of outcomes orientation is dated in the 1990s or earlier are considered early developers. This group includes Belgium (Flanders), Finland, Ireland, the Netherlands, Norway, Sweden and the United Kingdom, along with some central and eastern European countries (Hungary, Lithuania, Poland and Slovenia) which began reform programmes in education and training at quite an early stage compared to their neighbours.

In Sweden, the advent of learning outcomes is attributed to the introduction of a credit-based system in 1999. In Finland, national core curricula in vocational education and training and national requirements in the competence-based qualification system at upper secondary level in both initial and additional VET have been based on an outcome-oriented approach since 1993-94. The introduction of outcome-oriented curricula in the United Kingdom through NVQs is well known. Major drivers behind their introduction included the attempt to simplify the vast number of vocational qualifications then available and also to validate and certify the competences of people already in work to lubricate the labour market. The focus of these qualifications – in some contrast to the position in, for example, Finland and Sweden – was very much driven by a functional analysis of work tasks which stripped down occupations into distinct units. This has subsequently led to criticism that they atomise occupations, and has, most recently, led to criticism by a government-commissioned report that applying NVQ principles to students in IVET narrows the curriculum too much (Wolf, 2011).

These countries, however, have not remained static in relation to the development of an outcomes orientation. Indeed, the road towards outcomes orientation may be long and complex, as is illustrated by the example from Finland in the box below.

Box 1 Finland – giving learning outcomes greater leverage in the curriculum

Between 2008 and 2010, Finland saw a major reform of all its upper secondary VET qualifications. Although learning outcomes had been introduced during a national curriculum reform process in the mid-1990s, they had comparatively little effect or leverage on curricula themselves, in a context where education providers are responsible for the written and taught curriculum. Outcomes, at that point, were more like objectives than learning outcomes.

New national qualifications requirements have now been put in place, giving nationally defined learning outcomes greater influence over local curricula through reformed assessment processes. Whereas assessment criteria were previously written in comparatively general terms, such as in terms of knowing how to do something, the new assessment criteria are written more as outcomes related to work processes. At the same time, the number of grades has been reduced from five to three. The aim of this is to make it easier for assessors in the workplace to judge candidates. These developments in initial VET have been influenced by the introduction of competence-based qualifications for adults.

Source: Finland country review.

Another example is provided by the Netherlands, where the basis for the current competence-based approach in VET was laid down in discussions starting at national level in 1999, following the passing into law of the General Adult Education and Vocational Education Act (*Wet Educatie en Beroepsonderwijs*, WEB) in 1996. Qualifications were criticised for not giving enough attention to key competences. In consequence, national actors started a review process which led to a new quality framework in 2006. The first experiments with the current competence-based qualification structures were from 2005-09. They were supposed to be implemented by law in 2009, but this was postponed to 2012. In late 2011, it was announced that the competence-based qualification structure was to be renamed, reflecting a shift in emphasis towards vocationally specific knowledge and skills.

In Belgium (Flanders), although the learning outcomes approach is not new, implementation has been highly variable: in some sectors, updated and detailed competence profiles exist for each vocational cluster, while, in other sectors, competence profiles are missing or are outdated. This means that progress on practical implementation varies, in particular when looking at the translation of competence profiles into competence-developing education (teaching methodologies and assessment practices). The continuing VET sector is probably the most experienced in this field. A competence-based approach is well integrated and provides a reference point for professional requirements in the labour market.

4.2.2. Recent developers

In over one half of the countries analysed (Austria, Belgium (Walloon), Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Germany, Greece, Iceland, Latvia, Malta and Slovakia) where the introduction of learning outcomes into IVET is dated since 2005 (note that this means the introduction of legislation, i.e. the initial stage of the development process rather than the actual implementation of outcome-oriented curricula) are considered recent developers. Spain and Portugal are also included in this group, where outcomes orientation began early in one area of VET and has provided the basis for more widespread application more recently. Most of these countries are in central and eastern Europe and the Mediterranean. These countries have been those in need of more wholesale reform, modernisation and updating of their IVET (and VET) curricula. Outcome-oriented approaches have been key to this process and, therefore, seem especially prominent.

In Portugal, considerations regarding outcomes orientation were addressed comparatively early, in training for adults; these provide an informative example of the development process (see Box 2). In Spain, since the mid-1990s, unitisation and modularisation have been two of the principles applied in structuring qualification programmes in certain initial vocational training programmes as well as in continuing training (occupational training leading to certificates for both the unemployed and employed). These two principles informed the development of the national catalogue of vocational qualifications.

This group also includes Denmark, Germany and Austria. These countries have grappled to varying degrees with the advent of learning outcomes. Germany has perhaps faced the greatest challenges, since its IVET system is so closely bound to the structure of occupations, and any changes also have ramifications for the relationships between the different levels of government. Accordingly, reforms in outcome-oriented curricula would have consequences in terms of national wage regulation, and the adoption of a national qualifications framework has ramifications for the relationship between federal and regional government. As already mentioned, Germany has accommodated learning outcomes within modularised prevocational training programmes, known as transition programmes. Austria appears to have accommodated learning outcomes more readily than Germany and is in the process of developing occupational standards following the development of educational standards in previous years.

Box 2 Portugal – developments in adult training influencing IVET

In Portugal, it is possible to differentiate between the introduction of learning outcomes in 2007 and the introduction of a competence approach in 2001. During this time, the definition and description of qualifications based on learning outcomes has been one of the central pillars in meeting national strategic objectives, particularly as regards the role of quality assurance and system transparency.

In 2001, the national curriculum for basic education and the key competences as reference points for the teaching and training of adults provided the system with the initial political impetus to make the organisation of qualifications more coherent and uniform. This has been increasingly widened to cover other education and training subsystems and extend the use of learning outcomes. Both the adult education and training courses (AET) and the processes of recognition, validation and certification of competences (RVCC) are subject to the basic education and secondary education level key competences standard/referential which is organised in terms of learning outcomes.

The national qualifications system introduced in 2007 defines the concept of competence as being the proven ability to use knowledge, skills and attitudes at work, in professional development, in education and in personal development (Artigo 3º b) Decreto 396/2007). The national qualifications catalogue sets out defined competence standards, organised in competence units based on learning outcomes. Although these are used mainly for implementation of the processes of recognition, validation and certification of competences (RVCC), they represent an important developmental step towards the introduction of generalised qualifications designed on the basis of learning outcomes.

At this stage, things may not yet be uniform and stable in all the subsystems of education and training, nor within each educational or training modality: qualifications defined by contents (input) coexist with qualifications defined in terms of learning outcomes (output).

Source: Portugal country review.

Denmark saw the introduction of competence-based curricula in commercial training programmes in 1996 and has since proceeded, through a number of steps, to introduce learning outcomes in IVET, e.g. through a new apprenticeships programme designed to reduce early school leaving, through the 2007 reforms which combined all IVET programmes under the same legislation – one of the aims being to increase the possibility of acquiring a partial qualification – but, most significantly, through the development of its national qualifications framework.

4.3. Curriculum policy developments in the electronics and tourism sectors

As noted in Chapter 2, the study selected curricula from two sectors, electronics and tourism, to illustrate and contextualise the findings. Within each sector, an

occupation was selected as a reference point: mechatronics technician and tourist information officer. This choice of sectors and occupations was appropriate in terms of the contrasts they exhibit, as shown in Box 3 below. It was also hypothesised that the comparative analysis might highlight some interesting differences in policy and practice.

On the whole, the differences have been less significant than envisaged. The overall trend in policy in Europe is to improve the processes through which sectors are able to participate in the design of curricula and qualifications. Over the past 5 to 10 years, this development has tended to smooth out any differences that might have existed between different sectors in terms of the extent and nature of their engagement with vocational education and training systems. Similarly, the introduction of national qualifications frameworks and other tools has also led to a certain consistency in the processes by which curricula are designed (see Section 4.4.2).

At the same time, the study found that some differences persisted between the extent to which the different sectors organise themselves in terms of social dialogue processes in relation to vocational education and training. Evidently, mechatronics has emerged from two long-standing and well-developed industrial activities: electrical and mechanical engineering. In many countries, these two occupations have a long heritage, with long-established and/or well-developed institutions to match. The tourism industry tends not to have such well-developed institutions, although this statement risks over generalisation, since clearly in many countries the tourism industry is well-organised with institutions that are involved in training, such as in Spain. However, looking across Europe as a whole, it is the tourist sector which has tended to be the focus of more rapid growth and development. This is reflected by the fact that in some countries, programmes in tourism are of comparatively recent origin, while electronics programmes have been developed out of programmes in mechanical and electronic engineering. Despite such differences, sector variations were not found to systematically affect the answers to the research questions.

Box 3 Study sectors and occupations: state of play

Electronics

Electronics has been subject to rapid growth and development over the past two decades and has been a focus for the emergence of a number of new occupations, many demanding new competences, often at high levels such as mechatronics. The chosen occupation for analysis, mechatronic engineers are concerned with the electronic and computer control systems that drive the operation of nearly all modern machinery, from automatic braking systems in cars to unmanned deep-sea submersibles. Mechatronics as an occupation combines elements of mechanical engineering and electronics with control engineering, computing and systems design. It is found across a wide variety of industries including manufacturing in general but especially the automotive, aerospace, defence and materials processing industries. Although the occupation is becoming increasingly common as technology progresses and control systems become more prevalent, the title of 'mechatronics engineer' or 'mechatronics technician' is not always widely used in EU countries; other terms are sometimes used such as 'multiskilled manufacturing technician'.

Entry to the occupation requires an IVET qualification. As an identified programme/qualification, mechatronics is quite prominent at Bachelor's/Master's level but less so at ISCED level 3. Courses are often being developed at ISCED level 4 (post-secondary non-tertiary) to enable those with electronics or engineering backgrounds at level 3 to progress into mechatronics occupations. Curricula have typically been developed by drawing on existing curricula in electronics and mechanical engineering. Physical training infrastructure for use in practical training is important; to some extent, this inhibits the introduction of new learning methods. In the light of the firm-specific nature of many production processes, job-specific in-house training is important to build on the skills acquired within the public IVET system.

Tourism

Tourism continues to be a sector of growth and is a vital component of many local and national economies. The distribution of occupations varies across Europe, not least according to whether countries are net senders or receivers of tourists. Training has a key role to play in the sector's growth, and there have been many attempts to improve levels of formal training to replace the traditional emphasis in many countries on informal or non-formal learning. The provision of management training – seen as a prerequisite for increased quality in the sector – remains problematic. Middle and senior managers continue to suffer from a dearth of vocational management training that is both flexible in delivery and sets generic management skills in a tourism-specific context.

The chosen occupation for analysis, tourist information officers provide information and advice, and often act as agents between tourists and local accommodation providers and tourist facilities, making local bookings on visitors' behalf. It is an entry-level occupation, leading to supervisory and managerial posts such as tourist information manager. Formal entry requirements in terms of qualifications are diverse. It is often the case that programmes have been developed only recently.

Source: Guthrie (2008) and country reviews conducted for this research.

4.4. The reasons for introducing outcome-oriented curricula

In all of the countries reviewed, the introduction of an outcomes orientation in IVET curricula is reported to be the result of a mix of factors rather than just one. These factors are closely related to the functions which learning outcomes are intended to have within national systems. Learning outcomes are, indeed, capable of supporting, in some way, all the major current developments, including major qualifications reform, often associated with the introduction of national qualification frameworks (NQFs) and the introduction of output-focused governance arrangements. Accordingly, learning outcomes have the ability to enable policy-makers to deliver the full range of current developments in IVET.

Methodologically, it should be noted that the association of the writing of curricula in terms of learning outcomes with broader reforms has made it difficult for interviewees to separate the reasons for the use of learning outcomes *per se* from the factors driving reform in general. Indeed, one gets the impression that the use of learning outcomes is now taken for granted, though their form – and, to some degree, their function – varies. In general, the use of learning outcomes is understood as a tool rather than the main mission.

It is possible to identify a range of factors influencing the introduction of outcome-oriented curricula. Cedefop (2010a) identified four broad types: learning theories; linking VET and the labour market; new output-based governance arrangements; and EU policy on transparency and international mobility. The analysis below takes a different approach and separates overarching economic and social goals from what we term ‘operational objectives’ which relate to the more specific policies and tools. At operational level, we can identify bundles of objectives which comprise a number of broadly similar objectives, although, in reality, these groupings are themselves strongly interrelated.

This analysis supports and elaborates in greater detail on Cedefop (2010a), with one exception: learning theories at policy level were found to be rarely referred to in policy. Instead, at policy level, the main overarching reasons for outcome-oriented curricula are focused around economic and social issues rather than ideas about how people learn. This is not to say that learning theories and recent research on brain function do not inform discussions about learning outcomes and competences. However, these were not found to be significant drivers for their introduction, although, in some cases, they have been explicitly cited as influential factors, as in the case of Cyprus.

4.4.1. Overarching economic and social goals

Economic objectives relate to the policy of seeking to improve national competitiveness through skills development. This translates into improving the links between education and training systems and industry. This general objective is driving curriculum reform in one form or another in every country reviewed. This is not just about equipping people coming out of IVET with competences which are better geared towards labour market needs. In many countries, it is also about re-engineering systems so that they can more systematically meet the needs of modern business. Learning outcomes are important components of curriculum development systems that can respond quickly to changing needs and can equip people with wider competences in a context where employment is much less predictable and where employers require a mix of technical and key competences. Learning outcomes provide a means of unpacking and repacking curricula and involving employers more in regular structured dialogue. At the same time, governments are not using learning outcomes simply as a means of meeting business needs regardless of social or individual needs. As will be shown in the chapters that follow, learning outcomes are a means of communicating between different interest groups. Research has shown that reconciling competing interests is an important function of social dialogue (e.g. Schmitter, 1974; Winterton, 2000), and, in this context, learning outcomes may be seen as being involved in balancing employer needs (which have a tendency to be more narrowly focused on immediate business or sectoral needs) and employee needs (where employees seek wider skill sets to increase the range of potential jobs open to them).

Social drivers relate to matters of equality and inclusion, but they are more likely to manifest themselves in what might be termed democratic attempts to ensure that the outcome-oriented curricula being developed in IVET are based on a common platform shared with general education tracks – often linked in policy to the development of lifelong learning systems. Accordingly, social drivers for the introduction of outcome-oriented curricula into IVET tend to manifest themselves in the incorporation of key competences and general knowledge, in recognition systems and in the development of national core curricula to provide some form of equality of educational experience. This policy is linked to raising the status of IVET so that it is regarded as a positive choice rather than what people do if they fail to secure a place on a general/academic programme leading to university. Notions of compensating for social background through learning outcomes are much less prominent at policy level, although learning outcomes have an enabling function in some countries, such as Denmark and Germany, where they have been used to develop new alternative pathways to

help less able students to gain access to IVET (new apprenticeships in Denmark and modularised prevocational training in Germany). However, far more common than these developments is the devolution of responsibility for the tailoring of provision to match the needs of individuals or social groups to providers at local level. This is part of a long-term trend, and it is supported and promoted through an outcome-oriented approach.

In general, economic drivers are most prominent in policy documents and statements related to learning outcomes in IVET at national policy level. In all countries, economic factors have a role to play; in no country were social reasons found to be the biggest motivational factor. Equally, it is clear that there is a complex interplay between economic and social factors. Moreover, as we show below, the development of competence-based approaches in continuous VET linked to the validation of non-formal and informal learning has been influential in many countries in stimulating considerations about learning outcomes in initial VET, and such approaches clearly serve both economic and social goals.

The relative contribution of different drivers may be associated with the contributions of different types of stakeholders to VET policy and reform. Strong business representation is associated with an emphasis on the use of learning outcomes to pinpoint the skills required for employment and work-readiness. Trade unions and professional associations seek to use learning outcomes to define vocational or professional competence in a broader and more integrated manner. Educational and training professionals are more likely to emphasise the value of learning outcomes to ensure consistency between standards in terms of knowledge or craft skills or in terms of personal growth or progression to higher educational levels. The State may, at any point in time, seek to hold the ring between these interests, or to provide particular support to one or more interest which, for whatever reason, it chooses to promote.

4.4.2. Operational objectives

At this level of analysis, it is possible to identify a number of bundles of related objectives which constitute the reasons for the introduction or further development of outcome-oriented curricula. The relationship of these objectives to the high-level goals just described is complex: many of them may meet both economic and social goals. Many of these bundles are, of course, closely related to one another. Furthermore, which objective is most important is a matter of emphasis, and sometimes a matter of rhetoric, depending on the socio-political situation in a given country.

While it is difficult to generalise across Europe as to which are the most common reasons for introducing outcome-oriented curricula, it is possible to draw

up a list of reasons, in descending order of importance, on the basis of the review conducted of policy documents and interviews with policy-makers.

4.4.2.1. *National qualifications frameworks and credit transfer systems*

The introduction of the EQF (European Parliament, Council of the EU, 2008) and the associated development of national qualifications frameworks is the most common factor in the development of outcome-oriented curricula. This is reported explicitly by the interviewees as an important driver in countries such as Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Turkey. Indeed, at national level, policy issues related to learning outcomes tend to centre on qualifications reform, which has become an increasingly important lever for change within initial vocational education and training. This is part of an ongoing process related to the pursuit of a wide range of economic and social goals, especially the desire to improve the relevance of vocational education and training qualifications to labour markets. These findings are also confirmed by the latest monitoring of NQF developments in Europe (Cedefop, 2012b).

What is interesting about some of the countries listed is that they include dual system countries with long-established notions of competences underpinning their VET (Austria, Denmark and Germany) as well as all the countries of central and eastern Europe and the Mediterranean which are seeking to modernise their systems. In Bulgaria, for example, the first state educational requirements (2002-05) described knowledge and skills in fairly academic language; by taking EU policy and tools into consideration, the language has become more understandable for all stakeholders – trainees, employers, etc., and the new learning outcome could be more easily measured and assessed. In Austria, the EQF descriptors have been used as a basis for creating new educational standards, with the ministry responsible establishing key learning outcomes by defining activity descriptions and occupational profiles in cooperation with the Austrian social partners (Cedefop ReferNet Austria, 2011). In Denmark, the introduction of the NQF has implied an orientation towards an output-oriented system in which the learning outcomes become the pivotal point for laying down curricula. In the new regulations which became effective in 2008, the concepts of skills, knowledge and competences were introduced (Cedefop ReferNet Denmark, 2010).

The associated development of the European credit system for vocational education and training (ECVET) has also been influential. Those countries where the influence of the EQF and ECVET has been less keenly felt are, for example,

Finland, France, the Netherlands, Norway Slovenia and the UK (England). All of these countries have a well-established, endogenously developed understanding of learning outcomes ⁽¹³⁾. Liechtenstein is also less influenced by the EQF, since it follows developments in Switzerland. In Sweden, the European tools are described as fitting well with national priorities. It is reported that, although the Swedish system of education and training already reflects learning outcomes to a large extent, the European tools allow Sweden, and anyone coming to Sweden, to articulate learning outcomes more effectively in an international/European context.

4.4.2.2. *Systems for the validation of non-formal and informal learning*

The introduction of systems for the validation of non-formal and informal learning has been influential in developing policy around outcome-oriented curricula in many countries. This is reported as an influential factor by interviewees in countries such as the Czech Republic, Denmark, Estonia, Finland, France, Iceland, Malta, Norway, Portugal and the UK (England) ⁽¹⁴⁾. Indeed, in some of these countries, it is through these systems that learning outcomes or competences first appeared some time before the advent of national qualifications frameworks. In cases such as Finland, Norway and Portugal, competence-based education first appeared in the adult and continuing vocational education and training sector(s), involving the development of methods to assess adults' existing competences and to make a gap analysis against the competences to be developed in training programmes. In the Netherlands, accreditation of prior learning (APL) was developed from 1999 onwards, while competence-based education and training and broader qualifications, which seemed to fit together synergistically, were introduced in 2006. The development of APL in France has led to the wholesale rewriting of qualifications and standards in recent years. Written standards are published with the identification of the learning outcomes in the annex of the regulation (*arrêté*) setting out the jobs, types of enterprises, activities targeted by the qualification and competences which will be assessed.

⁽¹³⁾ Note that England and Scotland have differed in respect of the influence of the EQF. Scotland completed the referencing of its qualifications to the EQF ahead of the EU target date because the Scottish credit and qualification framework was already established as Scotland's lifelong learning framework.

⁽¹⁴⁾ The overall situation as regards validation of non-formal and informal learning in Europe is presented in the European Inventory on validation of non-formal and informal learning (2010) available at <http://www.cedefop.europa.eu/EN/about-cedefop/projects/validation-of-non-formal-and-informal-learning/european-inventory-scope.aspx> [accessed 15.10.2012].

4.4.2.3. *Modularisation*

Developments in modularisation have made use of learning outcomes in curricula and, to some extent, are dependent on learning outcomes. They are discussed in the policy debate on outcome-oriented curricula in a range of countries, e.g. Austria, Germany, Hungary, Latvia, Luxembourg, Portugal, Slovenia, Spain, Sweden and Turkey. Pilz (2009) has documented the growth of modularisation in VET and analysed rationales related to inclusion and improved transparency. Concepts of modularisation vary across Europe. Different modular systems allow students varying degrees of freedom in their choice of modules ⁽¹⁵⁾. Generally, they are structured to ensure that the students achieve a balance between general and vocational modules. In Sweden, modularisation is strongly linked to the principle of individual choice in lifelong learning; the system enables students to gain credit for the modules and to transfer them easily between vocational and general education and vice versa. Students may move from one programme to another and take their credits with them, with individual schools determining which additional courses are required, if any. In contrast, in highly structured education and training systems, such as those in Austria and Germany, modules are available only at certain stages of programmes and within certain tracks. Modularisation in Germany has been limited by concerns that it would undermine the strong link between IVET and occupations.

The increased popularity of these approaches is helping to embed the use of learning outcomes in curricula, but modularisation per se is not commonly cited as a primary reason for their introduction, perhaps since the focus tends to be on other measures which can set the preconditions for modularisation. At the same time, where modularisation has been introduced, the changes are leading to curriculum revision that makes use of learning outcomes. There is no guarantee that modularisation, once introduced, will remain a permanent feature; in the Netherlands, its demise has been announced.

In some cases, modularisation is linked to the unitisation of qualifications. Unitisation involves the disaggregation of assessment and is supported by the development of learning outcomes. The UK (England) and Ireland, for example, have sought systematically to unitise vocational qualifications to promote the tailoring of programmes and the sharing of units ⁽¹⁶⁾ between qualifications and to

⁽¹⁵⁾ Groups of learning outcomes, set out in educational standards or training standards, which are combined to show how learning outcomes should be taught or learnt together. Modules do not always correspond directly with units of assessment. Teachers and trainers may have some discretion to write modules or to make changes to them.

⁽¹⁶⁾ Units are groups of learning outcomes, set out in qualification standards, which are combined for the purposes of assessment. Units of assessment in qualifications do

encourage new organisations to contribute units to a national database. In the UK (England), learning outcomes have been regrouped and sometimes rewritten to support the introduction of a system of units and credits – the qualification and credit framework. This new system has required the redesign of qualifications and curricula to make them compliant with the new framework. In France, learning outcomes have been regrouped and rewritten to support the recognition of informal and experiential learning in unitised form.

Unitisation and credit accumulation may make it easier for students to gain recognition for their achievements. However, it is possible that unitisation and credit accumulation might appear to weaken the link between qualifications and the labour market. This might arise where learners accumulate units and credits but the labour market value of this achievement is not transparent to employers. However, it is also possible that unitisation might empower employers, who may design the units that they want and focus upon these units in training and recruitment. This is now happening in the UK (England) as part of the new qualification and curriculum framework (QCF). In the pursuit of modularisation and unitisation, the outcome-oriented approach is a tool which is routinely used when re-engineering the curriculum to balance the interests of stakeholders.

4.4.2.4. *Modernisation, rationalisation and simplification*

These terms are used in a number of countries to provide a rationale for outcome-oriented curricula (e.g. Belgium, Cyprus, Denmark, Latvia, Lithuania, Norway, Slovakia, Slovenia, Sweden and the UK (England)). Whether they are high-level goals or operational objectives is a controversial point, and depends to some degree on the individual country. The precise term used may also vary depending on the political rhetoric. Whatever term is used, the goal is clearly one of (a) improving labour market relevance by replacing old programmes and/or by reducing the overall number of programmes in IVET, and (b) developing curricula which are regarded as meeting the modern needs of industry, combining both key competences and technical skills; this is the case, for instance, in Cyprus.

In Belgium (Flanders), the term modernisation reflects the fact that many curricula are regarded as outdated and that the processes of curriculum development have been left to individual trades or craft associations with the result that the relevance of programmes is highly variable. Reforms are focused on putting in place systematic frameworks to ensure that all sectors work to clear

not always correspond directly to groupings of competences drawn from a particular occupational standard or profile. This may be because learning outcomes have been written to reflect competences from more than one occupational standard.

sets of procedures and standards. Learning outcomes play a valuable role in promoting these developments.

Some countries (e.g. Norway and Sweden) rationalise reforms in terms of bringing systems up to date, sometimes linked to concerns that they are under-equipped in the face of globalisation. This is a prominent argument in Nordic countries, such as Norway and Sweden, where something of a re-evaluation of their education and training systems developed through a process of social-democratic consensus is taking place.

In some central and eastern European countries (e.g. Estonia, Latvia and Lithuania), outcome-oriented curricula are seen as part and parcel of replacing traditional modes of teaching and learning and entire IVET systems which have been in a state of flux since the fall of socialism. New curricula provide a means of restoring communication between education and work, in a context where social dialogue mechanisms are still in the early stages of development.

4.4.2.5. *Permeability*

The development of pathways between IVET and both higher education and adult and continuing education and training is made possible by the introduction of learning outcomes in curricula (e.g. in Austria, Bulgaria, Cyprus, Estonia, Iceland, Ireland and the Netherlands). However, permeability is less commonly cited by the interviewees as a key driver. Where outcome-oriented curricula are introduced across entire educational systems, as in Ireland and Iceland, permeability becomes an additional rationale, and the credibility of outcomes approaches is reinforced.

4.4.2.6. *Quality*

Improving curriculum quality is an important objective. This issue is implicit in many of the reasons cited by interviewees and in the policy literature. Countries where this was indicated as a significant driver include the Czech Republic, Estonia, Latvia, Malta and Romania. However, some other countries have also adopted measures to improve quality which involve learning outcomes. For example, in Austria, a quality initiative was set up in 2005 that included an educational standards project for all VET full-time schools which focused on teaching and learning based on the concept of competences and learning outcomes. This early start with quality projects and competence orientation in school-based VET is seen as having prepared the ground for a broad understanding of the European qualifications framework.

4.4.2.7. *Increased autonomy for VET schools and colleges*

Although identified as a direct influence in only a few countries (e.g. in Austria, Croatia and the Czech Republic), learning outcomes are, in fact, deeply implicated in ongoing processes to redistribute roles and responsibilities within vocational education and training systems. Typically, this process is characterised as decentralisation in relation to the hierarchy of administrative levels from national government through regional and local administrations to providers. The development of NQFs appears to play an important role in this process, since it enables national authorities to retain some control over vocational education and training through the specification of learning outcomes within qualifications and related assessment processes. These frameworks enable national authorities to devolve some responsibilities for written curricula and particularly for taught curricula, from the top level down to subordinate levels.

There are a variety of ways in which control over the curriculum is decentralised. First, there are formal systems through which public authorities at regional or state level may adapt the written curriculum to regional needs. In Spain, for example, the 17 autonomous communities are entitled to vary the content of the curriculum for tourism, although the learning outcomes remain the same. Changing the content might involve addressing different geographic features or different touristic activities. In some countries, vocational schools are entitled to make decisions in relation to a defined percentage of the curriculum, for example 15% in Croatia. Some units of a qualification may be optional. In Slovenia, for example, not the entire curriculum corresponds to the national vocational qualification: 20% is defined locally, which leaves room for local flexibility.

The policy of decentralisation may take the form of requiring vocational schools to develop a school-level curriculum or programme. In the Czech Republic, for example, schools are required to prepare a school-based educational programme which draws on the vocational competences defined at national level. In Ireland, further education colleges and other vocational schools are obliged to design a learning programme which must be submitted to the regulatory authority FETAC (further education and training awards council) for approval. In Ireland, consortia of vocational schools have come together, supported by a sector body, to generate a shared learning programme which has been jointly submitted and approved. In Slovakia, vocational schools are now required to devise an educational programme which includes a local statement of learning outcomes (graduate profile): a statement of the graduate's key, general and vocational competences. In addition, the learning programme sets out the

sequence of modules, resources, environment, pedagogy, requirements for teachers, and evaluation and assessment requirements, etc.

Notwithstanding the long-term trend apparent in most European countries towards decentralisation, the distribution of roles and responsibilities is subject to constant adjustment. In Sweden, for example, there has been a reduction in the discretion available to schools and municipalities, the wide variety being seen as reducing the articulation between education and the labour market. Current Swedish reforms are designed to reduce the number of local lines of study, and permission for a new course must be obtained from the National Agency for Schools (*Skolverket*).

4.4.2.8. *Inclusion and reduction of early school leaving*

In a small number of cases, objectives related to inclusion, reducing early school leaving and improving levels of basic educational attainment are explicitly cited by interviewees as factors in the introduction of learning outcomes in curricula (e.g. in Belgium, Denmark and Iceland). However, such considerations underpin policy tools such as recognition of prior learning whose introduction, as discussed above, has been important in the advent of learning outcomes. In Denmark, for example, partial qualifications and a new apprenticeship have been introduced through the use of competence assessment. In Iceland, the introduction of learning outcomes is intended to boost retention and completion rates, and this was said to be a reason for formulating learning outcomes in curricula in a fairly holistic manner.

4.4.2.9. *Learner-centredness in the teaching and learning process*

Although many countries are pursuing policies associated with learner-centred pedagogies, these are not explicitly associated, at policy level, with outcome-oriented curricula. The needs of teachers were cited by only two countries (Austria and Croatia) as influential factors in the development of outcomes-based curricula. Although there is an important body of research (e.g. Cedefop, 2010a; Ginsburg, 2010; Ginsburg and Megahed, 2008; Psifidou, 2012a; Torney-Purta, 1999) which provides evidence on the benefits of learner-centred pedagogies, at policy-making level, low awareness was found of the relationship between curriculum reform based on learning outcomes and learner-centred pedagogies.

4.4.2.10. *Key competences*

Finally, policy and practice relating to outcomes have been considerably affected by the overlay of the idea of key competences, whose promulgation has been, of course, an important dimension of EU policy. The European reference framework

of key competences for lifelong learning (European Parliament, Council of the EU, 2006) defines competence as a combination of knowledge, skills and attitudes appropriate to the context. It identifies eight key competences necessary for personal fulfilment, active citizenship, social cohesion and employability in a knowledge society. Critical thinking, creativity, initiative, problem-solving, risk assessment, decision-taking and constructive management of feelings play a role in all of the key competences. All of the key competences are considered equally important because each of them can contribute to a successful life in a knowledge society and have entered into the debates and discussion around curriculum reform at policy level, albeit to varying degrees and in different ways in different countries.

4.5. Challenges facing curriculum policy

The account of developments provided in this chapter draws attention to a number of reforms affecting IVET and to the fact that, in many countries, IVET has been subjected to repeated reforms over a considerable period of time. There is evidence, for example from Finland and the Netherlands, that repeated reform does lead to adjustments so that curricula become fit for purpose. However, the volume and challenge of reform may produce resistance or caution and a lack of enthusiasm on the part of those responsible for making the reforms work and other stakeholders.

In countries such as Germany, the concept of learning outcomes has posed a challenge to current policy and practice, and so the process of reconciling learning outcomes approaches has become quite protracted. It is not unusual for reform to be introduced gradually. For example, in the Netherlands, the establishment of the current competence-based qualification structure was preceded by a lengthy period of debate about the balance between generic and technical competences.

Outcome-oriented approaches are also influenced by changes in government policy. In the United Kingdom, for example, a combination of a new government and austerity measures to reduce costs has meant the effective abolition of one set of outcome-oriented curricula, the diploma. Wider economic circumstances may also be having effects on the further development or implementation of policy. There is evidence, on the one hand, that countries have turned to the development of VET as a response to the crisis; training has 'functioned as an active policy against the financial difficulties confronting citizens' (Cedefop, 2011c). Governments and the social partners are working together to keep people in work by combining short-term working with training

(Cedefop, 2009d). On the other hand, economic and administrative problems are slowing reform in Greece and Portugal and creating uncertainty about policy in Hungary.

4.6. Key findings

The analysis of curriculum developments across Europe allows the following conclusions to be drawn:

- (a) until the past five or six years, the development of an outcomes orientation in IVET curricula had tended to be patchy across Europe as a whole. Within individual countries, developments had often been piecemeal. The development of national qualifications frameworks linked to the development of the EQF has, in most countries, offered the prospect for the development of outcome-oriented curricula in a much more systematic manner. In some countries, the advent of learning outcomes has provided a major lever for other reforms. Notwithstanding that EU tools are subject to national interpretation and understanding, they are providing a common platform for communication between different stakeholders which did not exist before;
- (b) although dating the advent of outcomes orientation is difficult, the study found that it was possible to classify countries into early developers – somewhat less than half of countries where outcomes orientation began in the 1990s or earlier – and recent developers – over one half of countries in the sample which have introduced outcomes orientation since 2005, mostly in central and eastern Europe and the Mediterranean, where the introduction of learning outcomes forms a part of major reform, modernisation and updating programmes;
- (c) it is important to emphasise that education and training systems are dynamic and that the political process is constantly balancing and rebalancing elements within those systems in response to a wide range of pressures. Even though the advent of outcome-oriented curricula appears to be a major structural change in initial vocational education and training, the precise form and function of curricula based on learning outcomes in any one country is subject to ongoing adjustment. Curricula in Finland, the Netherlands and in the United Kingdom, for example, have been rewritten on several occasions to strike the right balance;
- (d) in vocational education and training, the introduction of outcome-oriented curricula has often taken place initially and proceeded fastest in continuing training rather than initial vocational education and training. This might be linked to the fact that it has been easier to develop and implement

- competences for adults than for young people still within the mainstream and/or compulsory stages of the education system, since continuing training has not needed to take into account wider educational considerations to the same degree;
- (e) conceptualisations of outcome-oriented approaches are well-developed and widely disseminated in some but not all countries. In some countries, IVET curriculum development is greatly influenced by other ideas, such as national values about the role of education or other national reforms. Outcomes approaches based on endogenously developed theoretical or research formulations were found in a few countries, for example in Germany, France and the United Kingdom. However, in many of the 32 countries, particularly among the recent developers, learning outcomes approaches were more likely to take the form of the adaptation and interpretation of concepts taken from elsewhere, for example through the EQF;
 - (f) in all countries, the development of the IVET curriculum takes account of the current and historic structure of education and training systems. Outcome-oriented curricula may help to encourage innovation and institutional change, but curriculum development is also shaped by the existing character and structure of provision. For example, where there is a strong work-based component to IVET, as in the dual system, this may lead to different ways of formulating and interpreting learning outcomes in curricula;
 - (g) in general, the main drivers at policy level for the introduction of outcome-oriented curricula are economic rather than social. In particular, policy-makers are concerned to improve national competitiveness through skills development and seek to achieve this by improving the articulation between VET systems and labour markets. Equally, it became clear that there is a complex interplay between economic and social factors in curriculum policy development.

CHAPTER 5.

The design process for outcome-oriented curricula

5.1. Introduction

Some of the complexity and variety observed in curriculum design across Europe might be understood if we work from the principle that the processes are supposed to improve the articulation between the labour market and the education and training system. The use of learning outcomes makes it possible to develop curricula that:

- (a) equip learners with knowledge, skills and competence that are relevant to available employment opportunities and of value to them in a range of different work and social situations;
- (b) integrate different kinds of skills, for example theoretical and practical or transversal and generic skills;
- (c) are transparent and understandable to learners and other stakeholders;
- (d) may be learned, taught and assessed at various times and in a variety of places and ways;
- (e) are responsive to changing needs (Cedefop, 2010a).

The focus in this chapter is on the design process and how it is structured and organised. This includes actual practice, the division of labour and the way that the curriculum development process is undertaken by different participants. The aim is to examine the implications of outcome-oriented approaches for curriculum development and understand the variations between different approaches.

5.2. Structuring the design process

A theoretical framework developed for this study allows comparison between outcome-oriented curriculum approaches in different European countries. This model divides the design process into four stages: occupational standard ⁽¹⁷⁾,

⁽¹⁷⁾ A classification and definition of the tasks that workers do and the responsibilities that they exercise in different occupations (Cedefop, 2009c). Occupational standards are usually defined in terms of competences. In competence-based approaches, occupational standards are used as a basis to develop qualifications and curricula; they may also be used to inform research into workforce development and job design.

qualification standard ⁽¹⁸⁾, education standard ⁽¹⁹⁾ and training or learning standard ⁽²⁰⁾. This last stage, sometimes known as a learning programme, a study programme or simply a 'curriculum', sets out a plan for teaching and learning and, unlike the other standards, is expected to specify the inputs as well as the outcomes for learning. Together, these standards comprise the written curriculum in the broad sense employed in this research ⁽²¹⁾.

The four standards are connected to one another: together, they form what we might call the outcome-oriented curriculum approach. Figure 2 below shows how these standards communicate the needs of the labour market and the aims of the education and training system. These different needs and aims should be articulated through the curriculum design process. The diagram below shows how this conceptualisation implies a distinction between a normative statement of what the labour market requires – the occupational standard – and a normative statement of what will be involved in learning – the education standard. In this

⁽¹⁸⁾ A document which sets out a norm of what people need to learn and how the quality and content of learning is assessed (Cedefop, 2009c). In the case of qualifications which are developed according to an outcome-oriented or competence-based approach, the qualifications are usually composed of learning outcomes grouped together in units of assessment. Learning outcomes set out what learners are expected to know and be able to do. It is possible that the description of the learning requirements (learning outcomes) may be separated from the assessment requirements (assessment criteria); in which case, we might distinguish a 'learning outcomes standard' from an 'assessment standard' or an 'evaluation standard'.

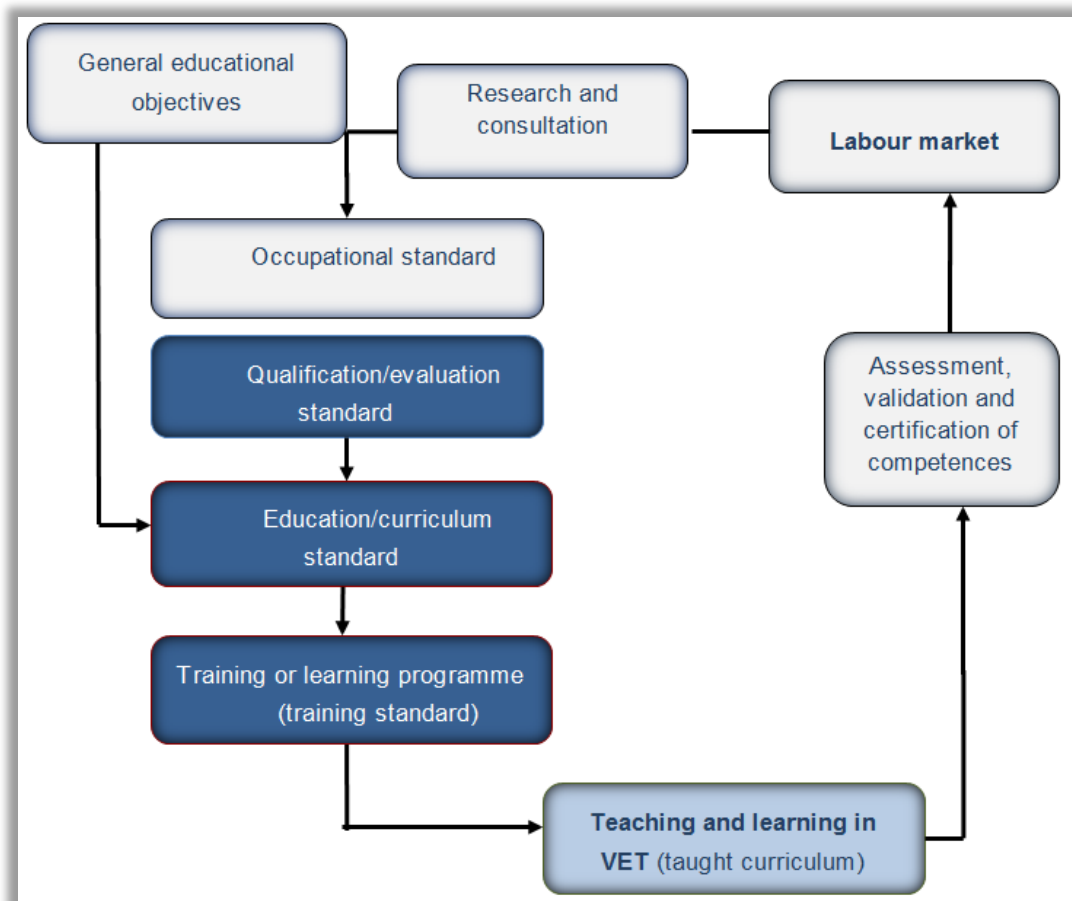
⁽¹⁹⁾ A document which translates the qualification standard into the educational context (Cedefop, 2009c). The education standard may set out the qualification requirements in relation to generic learning, subjects or key competences (for example, with respect to a national curriculum) or with respect to other qualifications. It may seek to articulate the more detailed requirements implied by the qualification standard in terms of knowledge and skills and pedagogic practice. It may also provide additional detail about how assessment activities should be designed to do justice to the character and organisation of the learning requirements. Where there is an overarching national curriculum which requires a combination of vocational, general and generic elements and options for all students of a certain age, the educational standard may seek to show how a particular vocational qualification is positioned within this national curriculum.

⁽²⁰⁾ A document which plans teaching and learning activities, taking into account the environments and resources required, duration and learners' needs (Cedefop, 2009c). Training standards may be created at regional and/or local levels and, exceptionally, at national level. Training standards are usually composed of sequences of teaching and learning; they may be framed through semesters, modules or years.

⁽²¹⁾ In some systems, but not all, occupational standards are understood to stand outside the educational system altogether; for example, they are understood as serving to classify occupations (Cedefop, 2009c).

way, the needs of the market are to be communicated to the education and training system that provides the services required to ensure the needs are met.

Figure 2 **The place of the curriculum in the relationship between the VET system and the labour market**



NB: The written curriculum is marked in dark blue and the taught curriculum is marked in light blue.
Source: Adapted from Cedefop, 2009c.

Provided the framework is a theoretical ‘ideal type’ ⁽²²⁾ model for an outcome-oriented approach to the curriculum design, it follows that not every standard – i.e. stage of curriculum development – will be found in every Member State. However, the model allows for comparison among countries and allows

⁽²²⁾ An ‘ideal type’ is formed by the one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sidedly emphasised viewpoints into a unified analytical construct (Weber, 1903-1917/1949, p. 90).

judgments to be made about whether, over time, particular VET systems are moving towards or away from this model ⁽²³⁾.

The four standards provide hand holds which help us to get a grip on the complexity of interaction between the labour market and the VET system (see Table 3). However, the standards are only a part of the process of communication. They are the written outcomes of the processes of negotiation, consultation, research and drafting – these are summarised in the second row of the table. The third row sets out the units or terms which are used to articulate each of the standards. In this model, competences form the elements of the occupational standard, while learning outcomes function as the elements of the standards that make up the written curriculum. Differences in language, usage and concept suggest that we should take account of the stage and processes associated with each term if we are to grasp this diversity.

This model provides the rationale for the way that key terms and concepts are understood in this report (see Chapter 3). It also provides a basis for understanding how key concepts relate to each other and how we might make sense of a diversity of practice in relation to a European reform agenda. It allows the combining of development processes which share significant features. For example, this analysis suggests that we can distinguish more differentiated from less differentiated approaches (see Sections 5.2.1 and 5.2.3). To some degree, as we shall see, this typology seems to be associated with the role and function of IVET within the wider education and training system, and, in particular, its relationship to general education.

However, caution is required. Cedefop (2009c) proposes, for example, that Ireland manages without an occupational standard for vocational qualifications because, in practice, employers implicitly bring an understanding of work roles and activities into the design of learning outcomes. This interpretation reminds us that we must consider carefully the actual processes and personnel through which documents are generated and not just how many formal documents are produced and the titles they are given.

⁽²³⁾ See, for example, Section 5.3.

Table 3 **A theoretical model for the outcome-oriented curriculum approach in Europe**

Documents ('standards' that inform or constitute the 'written curriculum')	WRITTEN CURRICULUM			
	Occupational standard	Qualification standard	Education standard	Training or learning standard (also known as a learning programme)
Processes that lead to the production of this document.	Work activities are classified, described and assigned a level.	Descriptions of work activities are translated into statements of what learners should gain from education/training. These statements are grouped into units (for the purposes of assessment). Also describes what evidence should be available to make informed judgments about learning outcomes.	Learning outcomes are situated in an educational context, for example: subject knowledge, content, assessment processes and events, institutional responsibilities, duration (hours, terms and years).	A plan for the teaching, learning and assessment activities that specifies in detail how learning outcomes will be achieved. The characters of teachers, resources, materials, tools, etc. are detailed. This document may be produced at school level or it may be shared.
Components or elements.	Competences.	Learning outcomes in units: knowledge, skills and other ⁽²⁴⁾ (packaged in units). Also sets out assessment criteria.	Learning outcomes in modules or options.	Learning outcomes in modules (modules may be located in real time; classes, teachers and rooms may be allocated).

NB: This table is concerned with the communication role of different standards. As a result, it does not address other functions that standards may perform; for example, occupational standards may support skills forecasting work.

Source: Builds on Cedefop (2009c) which distinguishes between occupational, educational and assessment standards.

5.2.1. Differentiated approaches to curriculum development

The process of outcome-based curriculum development is said to be differentiated where there are several recognisable stages. This approach may be found in those countries where IVET programmes are situated in mainstream institutions or closely associated with general education. This means that the IVET curriculum includes general or academic knowledge, though the levels required may be lower than that of entirely academic programmes (or that the IVET programme is part of the national curriculum, as in Sweden, for example).

⁽²⁴⁾ Formally known as competence in the EQF. Other competences include attitudes, dispositions, capability for responsibility, values, etc.

These programmes are taught in a variety of institutions, for instance specialised vocational schools, general vocational schools and schools that offer both academic and vocational programmes. In some, but not all, cases, these programmes qualify learners for further or higher education as well as entry to employment. In countries such as France or Sweden, vocational qualifications provide one way of achieving a national school-leaving certificate. However, the degree of recognition given to vocational achievements varies in some countries (such as Slovenia). Students must pass an additional general exam if they are to gain access to university, while, in France, there are different kinds of *baccalauréat* which enjoy different statuses and are associated with different modes of provision. The manner in which IVET is integrated with the rest of the education and training system is complex, as there are legal, curricular, institutional and pedagogic dimensions to be considered.

If IVET is to be taught and learned alongside a general educational curriculum, this implies that the written curriculum has to integrate it with the rest of the curriculum. This was the case with most curricula investigated in this study. It follows that competences arising from the occupational standard have to be interpreted and organised in such a manner that they can be taught alongside academic subjects and that the learning from these vocational curricula can, to some degree, be recognised in relation to overarching national standards, such as matriculation requirements for higher education.

Where IVET provision is embedded in the national education system, the written curriculum is clearly distinguished from the occupational standard. Furthermore, the written curriculum may be divided into a qualification standard, an education standard and a training programme. This implies that there will be extensive involvement of teachers and education professionals in its design. In such a system, IVET is subject to the institutional and cultural norms that govern education. Accordingly, it is less subject to the institutional and cultural norms that regulate particular occupations and work more generally. If IVET is to be more closely associated with the competences required for specific occupations, those competences will need to be defined independently from the educational world by people who belong to or understand the occupational world. This work amounts to the task of producing an occupational standard. There follows the task of working through the implications of the occupational standard for teachers and students who are also participating in a broader curriculum with other subjects. This leads to qualification and education standards and training programmes that detail various aspects of what should go on in schools.

Examples of this approach were found in the case studies for France, Luxembourg, Romania and Slovenia (see Annex 2). In the examples given, the

curricula regulate programmes that are taught in specialist vocational (e.g. Slovenia) or technical (e.g. Romania and Slovenia) schools. Although technical and vocational schools are specialised and serve a vocational track, they also participate in the broad national curriculum. Accordingly, the curriculum development process must reconcile the vocational learning outcomes with the rest of the curriculum.

To summarise, in general, where IVET curricula are well integrated into the national general education system, it can be expected that:

- (a) there are likely to be more stages clearly distinguished from one another – this is because the development process is intended to involve a greater variety of stakeholders;
- (b) the educational standard will be particularly complex because it serves to reconcile vocational learning outcomes with learning outcomes associated with subjects and general educational objectives;
- (c) there are likely to be a variety of different types of learning outcomes incorporated into the curriculum with a view to meeting the requirements of the various stakeholders, e.g. employers, higher education institutions, schools and government.

5.2.2. Undifferentiated approaches to curriculum development

Undifferentiated approaches are those with relatively few recognisable stages in the process of curriculum development. This approach is associated with curricula which serve programmes aimed at learners who have completed the national curriculum. Such programmes are largely focused on vocational learning with a relatively small component of generic skills and no general or academic knowledge. These programmes are intended to have a largely (or wholly) work-based character. The training programmes are not situated within upper-secondary schools that also provide general education but are taught in specialist upper-secondary vocational schools or post-secondary institutions or through alternance. These are cases, for example in the UK (England) for the NVQ level 3 curriculum in travel services and in Ireland for the traineeship in professional cooking, where the overall structuring of the design process is relatively simple and undifferentiated (see Annex 3).

Undifferentiated approaches also exist where there are developed social dialogue mechanisms and there is consensus around the aims of VET. Denmark, Finland and Norway all have relatively undifferentiated approaches for the curricula analysed in this study.

Undifferentiated approaches may also be found in relatively small countries, such as Finland and Ireland, where fewer organisations need to be represented

and, at the same time, expensive, long-winded and formalistic procedures may be avoided. In Finland, the project group for the tourism qualification, a team of 4 to 10 people, produced the draft national qualification requirements in the course of one year (see Annex 3).

Spain is another example of a country where undifferentiated approaches to curriculum development may be found. There is no 'educational standard' for the curriculum analysed. This is possible because this post-compulsory programme has a narrow occupational focus; there is no need to align vocational learning outcomes with traditional subjects. Furthermore, the competences are extensively rewritten when they are formulated as learning outcomes. This makes it easier to formulate them in terms which are realistic for a training environment rather than a work environment. Accordingly, the occupational competences are set out in the professional qualification which then directly informs the development of the professional modules for the higher national tourist guide, information and assistance programme. This latter document combines some of the functions of the qualification and curriculum standards and some of a training programme (see Annex 3).

In summary, a relatively undifferentiated development process suits particular programmes because:

- (a) the vocational curriculum does not need to be modified to align it with the rest of the national curriculum;
- (b) the curriculum serves mainly to provide entrance to the labour market, and, accordingly, it may be denominated entirely in terms of learning outcomes that reflect competences from the occupational standard. However, the inclusion of key competences, as in Finland, may increase the value of the curriculum for progression into further or higher education;
- (c) the variety of stakeholders is limited because of the relatively strong occupational focus. This implies that stakeholders' views and interests do not need to be accommodated in a highly differentiated process;
- (d) alternatively, a less differentiated process may, to some degree, be a reflection of the size of a country: where there are fewer stakeholders to accommodate, there is less need for a differentiated process.

5.2.3. Semi-differentiated approaches to curriculum development

The semi-differentiated approach to curriculum development is intermediate between the two approaches outlined above. For example, the travel adviser qualification in Hungary is another standalone qualification that has been developed for learners who have acquired their school-leaving certification. It is delivered in schools rather than in the workplace and is regarded as supporting

progression into higher education ⁽²⁵⁾. In consequence, there is a need for the qualification standard to be framed in a manner which articulates its relationship with the general educational curriculum by setting out a wide range of competences in addition to vocational competences. The Hungarian development process includes just three stages; however, the third stage – the central programme – provides considerable detail in methodological, personal and social competences as well as vocational competences (see Annex 4). The following table summarises the degree of differentiation found in some of the examined curricula.

Table 4 **Degree of differentiation in the design process**

Degree of differentiation	Curriculum examined
Differentiated	France (baccalauréat professionnel des systèmes électroniques et numériques), Luxembourg (mechatronics), Romania (technician in tourism), Slovenia (gastronomy and tourism)
Semi-differentiated	Hungary (tourism adviser)
Undifferentiated	Ireland (traineeship in professional cooking), Finland (tourism sales and information services, travel counsellor), Spain (higher technical tourist guide), UK (England) (travel services)

Source: Authors.

5.3. What purpose does the differentiation of the curriculum development process serve?

It is possible that differentiation of the curriculum development process serves to increase representation in curriculum development. By representation, we mean the effective inclusion of relevant voices in the shaping of the curriculum. Improved representation may result from increased numbers or from more sustained involvement and more intelligent or more significant contributions. This finding is supported when distinct stages of the development process are tailored so that they become more accessible to particular stakeholder groups.

An alternative way of understanding different structures for designing curricula is to argue that such variations reflect cultural differences in relation to how competence and learning outcomes are understood. For example, it is argued that the Germans do not have occupational standards in the English

⁽²⁵⁾ In the case researched, the programme was delivered partly in the final year of upper secondary school and partly in a subsequent, optional year.

sense because the German concept of *Handlungskompetenz* is defined on the basis of tripartite involvement and consensus reached between employers, trade unions and the State. The German system does not conceptualise the occupational standard as being owned by employers and forming the foundation upon which the curriculum is built. Instead, the task of defining vocational education (*Berufsausbildung*) is shared between employers, unions, teachers and craft associations, and the *Berufsbild* is produced as part of the collective process of defining a qualification (Cedefop, 2009c). However, occupational standards have been introduced in countries that appear to share the *Handlungskompetenz* concept (Austria and Luxembourg), which implies that cultures can change.

Cultural understandings are likely to be associated with the way in which roles and responsibilities are distributed and conflicts are resolved. When the State reforms the design process to increase or decrease the number of stages, it may hope to manage and accommodate competing interests more effectively or, indeed, emphasise one set of influences over another.

Cedefop (2009c) reported that the following countries did not have any kind of occupational standards: Bulgaria, Cyprus, the Czech Republic, Denmark, Finland, Germany, Iceland, Ireland, Liechtenstein, Norway, Slovakia and Sweden. Since that point in time, Slovakia has developed occupational standards, while Cyprus, Iceland and Malta are currently doing so. The absence of occupational standards in this group of countries implies an outcome-oriented curriculum development process that is less differentiated. In those countries where the dual system is well established, employer and employee representatives have a strong influence over both the curriculum and its delivery. It follows that the world of work has a continuous influence on IVET. In countries with occupational standards, there is a greater division of labour with respect to the curriculum development process. The contribution of employers (and employees) is most emphatic during the definition of the occupational standards phase, while the role of teachers, curriculum specialists and educational managers becomes increasingly important as we move downstream towards the taught curriculum.

While differentiation of the curriculum development process does support the involvement of different types of stakeholders – employers, higher education institutions, teachers, assessment experts, curriculum experts, head teachers and local curriculum leaders – there could be a danger that extended processes of curriculum development lead to a VET system which is slow to respond to changes in the labour market. In France, the employer's association for the industry formally requested, in June 2008, that the *baccalauréat professionnel*

des systèmes électroniques et numériques be updated to include competences relating to optical fibres. This updating took more than three years and was approved in November 2011. However, there are cases, such as in Croatia or Slovakia, where, although distinct stages in the curriculum development process exist, these are quick, shorter and involve fewer participants than in a large country such as Spain or France. Small working groups are responsible for developing occupational and qualification standards. There is a well-defined methodology, with the whole process taking six months in Slovakia and two to three months in Croatia.

There is also a concern that the transformation and adaptation of standards that take place in an extended, highly participative process could lead to disappointment for some stakeholders. For example, research into the development of advanced diplomas in engineering in the UK (England) (and into similar qualifications corresponding to other sectors) revealed that some of the bodies that represented employers were disappointed to find that learning outcomes which they had defined and included during early phases of development had been removed or adapted at later stages (Ertl et al., 2009). This also shows how the curriculum design process is a process of negotiation between various stakeholders with conflictive or different interests.

5.4. Key findings

The process of designing an outcome-oriented IVET curriculum requires communication between the VET system and the workplace. This communication process unfolds differently in different countries. The analysis undertaken allows the following conclusions to be drawn:

- (a) the curriculum design process is broken down into a number of stages where different stakeholders and organisations play different roles and exercise different powers. In the theoretical framework of this study, these stages are represented as four different standards: occupational standard, qualification standard, educational standard and training or learning standard. If we look at the practice of designing outcome-oriented curricula across different European countries, we can distinguish a number of differences in approach:
 - (i) the number of stages varies between countries. Some countries have substantially differentiated processes, broken down into many distinct stages characterised by different subprocesses, while others have fewer distinct stages;

- (ii) the function of each standard varies between countries. This is partly because there are different numbers of stages; it may also be because the length of the stages varies between countries;
 - (iii) terminology varies as languages vary in Europe and reflects national contexts. For example, some countries such as Germany, France, Hungary and Luxembourg do not use the term learning outcome in their curricula;
- (b) more elaborate and differentiated processes of design are associated with IVET systems that are well integrated in the national education system. This follows because:
 - (i) there are likely to be more stages, and they are likely to be more clearly distinguished from one another; in this case, the development process is intended to involve a greater variety of stakeholders;
 - (ii) there is a role for a distinct educational standard in such systems because this standard can perform the task of reconciling vocational learning outcomes with learning outcomes associated with subjects and general educational objectives;
 - (iii) there is likely to be a variety of different types of learning outcomes incorporated in the curriculum because the curriculum is intended to meet the requirements of many stakeholders, e.g. employers, higher education institutions, schools and government;
- (c) differentiation of the curriculum design process helps to engage appropriate stakeholders and experts; lengthy processes of curriculum development that may lead to a VET system which is slow to respond to changes in the labour market should be avoided.

CHAPTER 6.

Actors involved in curriculum design

6.1. Introduction

The capacity of learning outcomes approaches to lead to valid and credible curricula also depends on effective representation of stakeholders. Outcome-oriented approaches aim to achieve high-quality and sustained stakeholder engagement in the design process. The logic of stakeholder involvement implies that stakeholders have up-to-date and accurate knowledge of what current and future competences are required and are able to communicate this knowledge. The curriculum serves different stakeholders; accordingly, the design process must include arrangements whereby different interests are reconciled and, where appropriate, compromises or alternatives are negotiated (see, for example, Cedefop 2010a; Cedefop, 2010b; Cedefop 2010c; and Coles and Werquin, 2007). This chapter discusses how this negotiation process takes place in different countries and settings, and presents the actors involved and their different functions.

6.2. Who initiates curriculum development?

Many countries regularly review and update curricula in the light of changes in the labour market and skills needs. In Spain, for example, all occupational standards are reviewed every five years, and this process leads to changes in curricula.

In a number of countries, a review of vocational qualifications may be requested by VET providers, employers or professional associations (e.g. in Latvia and Hungary) as well as by the central authority. In some countries (for example Germany), employers' organisations have the right to introduce new curricula. However, in many other countries, this is not the case. In the UK (England), People First, a state-managed representative body, has led qualification reform for the sector, but many of the measures that it has taken have been driven by national policies. In France, the latest format of the *baccalauréat professionnel des systèmes électroniques et numériques* was proposed by the employers' Union of Metallurgical Industries and Trades (UIMM). In the Netherlands, each sectoral centre of expertise reviews the qualifications structure for which it is responsible. This is overseen by a management board representing business, education and trade unions. Lacunae and overlaps are

identified. The centre may ask for reviews to be carried out and may also be asked by others to carry out reviews. A 15-step process exists whereby information may be received from stakeholders and assessed. It is intended that only 10% of 'qualification dossiers' will be reviewed each year, while an aim of recent reforms has been to ensure that such 'dossiers' are more durable than in the past and have a longer 'shelf life'.

The evidence from Germany and France that employers are initiating changes suggests responsiveness to changes in the labour market. Where new systems are being introduced, e.g. in Malta, or systematic changes are being brought in, e.g. in Austria and the UK (England), much of the design work is usually driven by the government. In these cases, there are concerns about whether employer engagement can be sustained and whether changes will be seen to achieve substantial improvements rather than refinement of the system.

6.3. Who is involved in curriculum design and how?

Hall and Soskice have described how, in what they call coordinated economic systems, companies and other interest groups have the opportunity to negotiate agreements which serve mutual interests (Hall and Soskice, 2001). The negotiation of vocational curricula provides a good example of such a process: transparent, shared standards for occupations or vocations may benefit all of the labour unions and businesses that form an industry. This kind of negotiation is well documented in Germany. At the level of national policy-making with respect to work-based and school-based training, interviewees spoke of the need for negotiation and compromise.

In most countries, the social partners and other stakeholders have representation on the committees and councils that develop, review and validate standards and qualifications (Cedefop, 2010d). However, this does not mean that the interests of all groups are equally represented or that their influence is equivalent in different countries and sectors. The character of the representation will depend on: the power of the development agency to determine who becomes a representative; why organisations chose to send representatives; the capability of representatives to contribute; the rules that govern their contribution; their access to support; and other information (Coles and Werquin, 2007).

In a number of countries, e.g. Lithuania, Poland and Slovakia, it was reported that, although employers are formally given opportunities to contribute to the design of curricula, such opportunities are rarely taken up in practice. In Poland, for example, the working groups that prepare the curricula are

represented mainly by educationalists; the social partners usually participate during the consultation phase.

The responsibilities associated with curriculum design are allocated to different institutions in different countries. In the UK (England), for example, there are independent awarding organisations responsible for designing and administering assessment. These organisations have a particular focus on keeping assessment reliable and cost-effective because they compete with other awarding organisations for a market share.

‘The main issue for us is making sure that assessment criteria are compliant and make sense. Can a learner complete this badly and still meet the standard; getting the verbs right, but also the context, making sure that the standard is suitable for the level’ (awarding organisation, sector specialist, English case study on tourism).

Stakeholders are engaged in the design process in a number of ways, including their involvement in working groups, consultation and governance. These different types of involvement are discussed throughout this research paper.

6.3.1. Working groups

In most countries, the development of the written curriculum is led by a working group which is usually appointed by the official qualification agency and includes representatives of different stakeholders. Representation provides an opportunity for consultation, but it can also provide the opportunity for stakeholders to shape design directly and share responsibility for the curriculum-making process.

In Croatia, Finland and Ireland, for example, a single working group has responsibility for the development of all elements, from the occupational standard to the published educational standard or curriculum. However, the composition of the group may change over time or different stakeholders may play a more dominant role at different stages.

In countries such as France and Romania, the several stages of the written curriculum design are assigned to different working groups, although some members may serve in all of them. Not all stakeholders are equally strongly represented. In Ireland, for example, tourism and hospitality awards are developed by standards groups that include a few representatives from employers’ organisations, but teacher representation and voice are likely to be stronger.

Working groups may be relatively long-standing. The same individuals may come together over a number of years to discuss and resolve a range of educational and training matters that affect their industry. Alternatively, working

groups may be relatively short-lived, called into being to design a particular qualification and then disbanded.

Working groups usually bring together employers or their representatives, officers from the qualification agency or government department responsible, educational representatives, for example head teachers and trainers, and technical experts. In Spain, for example, working groups typically have representation from the Spanish Confederation of Employers' Organisations (*Confederación Española de Organizaciones Empresariales, CEOE*); the General Workers' Union (*Unión General de Trabajadores, UGT*); and the Workers' Commissions (*Comisiones Obreras*), as well as from specialist employers' associations. The technical experts have experience and know-how in the writing of curricula. The other stakeholders are expected to contribute first-hand knowledge from their domain: what skills employers want, what is practical within training schools, etc.

In some countries, working groups explicitly give equal representation to employers and employees and assign them a decision-making rather than an advisory role in defining qualification standards. This is the case, for example, in Germany, the Netherlands, Romania and Spain. In countries such as France, Portugal and Slovakia, there is equal representation but only an advisory role is ascribed. In the UK (England), there is no formal role for employee organisations at all.

In practice, it is often the technical experts or the agency officials who take the lead role in drafting the units and their learning outcomes. The role of the educationalists and employers is to review (verify, propose changes and validate or reject the proposed changes).

Where the responsibility for curriculum design is divided between national, regional or local levels, there may be working groups at more than one level. For example, in Germany, enterprises have representation not only on federal working groups that design the work-based curriculum but also on the state-level councils that design curricula, as well as in the regional chambers of commerce that design the assessment tools.

6.3.2. Consultation

Consultation is used to test the outputs of the working groups. Consultation is not always very extensive and may be limited by time and cost. The extent of consultation is variable. In Finland, for example, the draft qualification standard is circulated to employers, trade unions, teachers and student organisations that are selected by the project group and the leading expert. Consultation may be extended where there is also a local curriculum or learning programme. In

Finland, local employers and employees are consulted in the design of the local programme.

In Finland, Iceland and Ireland, awards designed by working groups are put out to consultation on the Internet so that interested parties may comment. In the UK (England), the development process for the diploma in engineering was backed by high-profile consultation. The curriculum development was assigned to sectoral bodies with the expectation that they consult through their employer networks; in addition, a series of public meetings were held across the UK (England) that were attended by employers, teachers, trainers, higher education representatives and special interest groups to discuss and review both the proposed qualification standard and, subsequently, the educational standard. The process did achieve a relatively high level of engagement, but it took time and money.

Spain provides a good example of practice in consultation; the social partners in regional administrations have been engaged in and were able to contribute to the first part of the written curriculum: the professional qualification. Interviewees reported that, as result of this consultation, which is well documented and transparent, there were many changes made in the drafting of the qualification; this, in turn, had an impact on the development of the curriculum.

Similarly, and to a greater extent, in Austria, consultation typically involves over 100 organisations, especially local chambers of commerce and employers. This suggests that, where there is already a strong tradition of employer involvement in the shaping of vocational curricula, it is possible to engage employers in consultation on learning outcomes. In Iceland, it was reported that the social partners represented in working groups were effective at engaging their constituencies in web-based consultation, but that they were helped by the relatively small size of the country. One curriculum development agency carried out a consultation through employers' associations, giving it access to a database of around 700 employers. However, the response rate was around 5%. This consultation helped to inform the decision to move from a three-year to a two-year training programme, which led to a rewriting of the curriculum.

Consultation without representation on working groups may be limited. In Croatia, for example, teachers, enterprises and trade unions are represented on the key working group that designs the curriculum; however, this is not accompanied by wider consultation with stakeholders.

How consultation may lead to curriculum innovation is illustrated by the Irish example where a group of seven chefs spent a day reviewing draft learning outcomes for the qualification standard in professional cookery to judge whether

each was desirable, essential or even relevant and to suggest additional learning outcomes where appropriate. Participants were informed of 12 changes that were made to learning outcomes in the light of this consultation to differentiate menus from those of other restaurants.

Where consultation involves students, it is possible that outcomes will be reviewed to ensure that they are intelligible to them. However, in the case of the curricula investigated in this research, students had not been consulted, neither in the development of the qualification nor in that of the training standard. Only at the level of school curriculum was the involvement of students reported, for example in Slovakia. As was to be expected, learners interviewed were unlikely to report that they were familiar with the learning outcomes. Only in countries where learning outcomes are relatively holistic, e.g. Norway, were learners confident that they knew what the learning outcomes were. Even in Denmark, where students are provided with an online tracker denominated in terms of learning outcomes, students were reported to be 'not very aware of learning outcomes' (Danish case study, interview with students). More able students were reported by teachers in Denmark to be more attentive with regard to learning outcomes. The fact that the vast majority of learners do not understand learning outcomes challenges the claim that learning outcomes make for greater transparency.

Finally, the involvement of teachers in consultation may, in principle, lead to questioning about whether the curriculum will be accessible to different kinds of learners in different environments, including, for example, disabled learners and other disadvantaged learners. It is also possible that there is consultation with specialist agencies with reference to learners with disabilities or special educational needs. This did occur in the case of the advanced engineering diploma in the UK (England).

6.3.3. Governance

In most countries, the formal responsibility to approve curricula lies with the government. However, in some countries, governance of the curriculum design process is fairly evenly distributed across regional and local levels, whereas, in others, it is mostly concentrated in the central government authorities.

In France, for example, curriculum design is governed by administrative officials of the relevant ministry. Employers are included within the professional consultative committee (*Commission Professionnelle Consultative, CPC*), which is the body that is responsible for the development process. The CPC forms a subgroup, involving representatives of employers and employees as well as inspectors and officials who carry out the research and write the standards.

Similarly, in Austria, curriculum development is directly controlled by the relevant ministries.

In many countries, however, such as Bulgaria, Croatia, the Czech Republic, Estonia, Finland, Ireland, Italy, Latvia, Lithuania, Romania, Slovenia, Spain and Sweden, the curriculum development process is controlled by a public but quasi-autonomous qualifications agency, although formal approval is given in the form of a ministerial or government decree.

The recent development of outcome-oriented approaches in Ireland, Portugal, Slovenia and Spain is associated with a reduction in the power of sector-related qualification development bodies and awarding bodies. In these countries, the introduction of a new system for the development of all vocational qualifications, for example, in line with a national qualifications framework, has enhanced the influence of the central vocational curriculum agencies. These agencies have defined a common language, common structures and common processes which apply to the development of all vocational qualifications. In countries such as Croatia and Slovenia, this central agency directly manages the curriculum development work. In other countries such as Ireland, the Further Education and Training Awards Council (FETAC) works in partnership with the sectoral agency that, historically, was responsible for qualification development for the sector.

In a number of countries, stakeholders interviewed reported that it was difficult to motivate employers to dedicate time to joint working groups or even to become involved in consultations. Interviewees also expressed concerns that, while the creation of new vocational qualifications and curricula had engaged employers, it was not known whether that interest could be sustained for their review and update.

There are some countries where sectoral bodies carry a great deal of authority in the curriculum design process. In Liechtenstein, for example, qualification development is dominated by sectoral bodies known as *Organisationen der Arbeitswelt*. These organisations employ experts who carry out the writing, researching and consulting; they may also bring in external expertise. Either the government or an *Organisation der Arbeitswelt* may trigger curriculum modification. The latter guides the written curriculum through an extended process of consultation and drafting which usually lasts four years, after which it is submitted to the national office for VET and career counselling for national approval.

In the UK (England), People First, a publicly financed body that represents the hospitality and tourism sector, has been delegated the responsibility of developing vocational curricula in this sector. It directs and manages curriculum

writing and consultation, although there are overarching rules and principles that have been defined by the curriculum regulatory authority 'Ofqual'. This approach in the United Kingdom results from a policy of deregulation. The central curriculum development body, the Qualifications and Curriculum Development Agency (QCDA), has been abolished, and the central regulatory authority 'Ofqual' is stepping back from explicit intervention in the development of curricula. The current policy is that the role of the government should be limited to setting up the system and providing quality assurance while development agencies such as People First and the independent awarding organisations develop qualifications. Hungary also appears to be shifting authority for vocational qualification development towards business. The Hungarian Chamber of Commerce has been granted new authority to review and rationalise vocational curricula.

Some countries may be classified as taking a partnership approach. In the Netherlands, 17 centres of expertise are instructed and funded by the State to develop qualifications for their sectors in accordance with national cross-sectoral rules and templates. The centres of expertise (*Kenniscentra beroepsoponderwijs bedrijfsleven*) consist of representatives from employer and employee organisations and from public administration who cooperate as equal partners. In Latvia, a national tripartite Subcouncil for Cooperation in Vocational Education and Employment supervises the work of the Sectoral Expert Councils which are established by employers' and trade union confederations. The Expert Councils carry out the research and consultation to develop and update occupational standards and vocational qualifications.

In Spain, the General Council for Vocational Training (*Consejo General de Formación Profesional, CGFP*) was set up by legislation in 2006 as a tripartite body with representation from employer and employee organisations, as well as from national government and the autonomous regional communities. This Council is the governing body for the National Institute of Qualifications (*Instituto Nacional de Cualificaciones, Incual*) which develops and accredits vocational qualifications.

Germany provides a good example of a well-established model where authority for curriculum design is formally distributed. The Federal Government delegates authority to the Federal Institute for Vocational Education and Training (BIBB) which, in turn, recognises the rights of employer organisations to shape the curriculum for the work-based element of vocational standards. Furthermore, the regional authorities (*Länder*) have authority to agree the curriculum for vocational schools collectively. However, in practice, the regional authorities agree that a particular regional authority will take the lead role for a particular vocational curriculum. For example, Baden-Württemberg takes this role for

mechatronics. A similar distribution of responsibility operates in Spain, where the Canary Islands exercise a lead role in the development of the higher technical tourist guide qualification. Norway's knowledge promotion reform is intended to give local vocational schools responsibility to operationalise the national curricula; this involves working closely with businesses (Cedefop ReferNet Denmark, 2011).

Where governance is distributed, this provides opportunities for stakeholder representation, and it may increase the capacity of particular groups of stakeholders to make their voice heard and ensure that their interests are protected. Over time, interest groups appear to develop an ability to work together and to find ways to negotiate their differences and reach compromises. This may be easier to do at local, regional or sectoral level, as the parties involved have common interests and shared values.

6.4. The role of curriculum design experts

The outcome-oriented approach is an analytical and systematic approach to curriculum development. It is always based upon explicit rules, for example about how statements should be formulated and organised and about who should be consulted and who should decide. In some countries, for example Ireland, the introduction of an outcome-oriented approach is understood as establishing a uniform, national process for the production of all vocational curricula and is necessary for that process to be regulated by guidelines and common procedures. Traditional input-based approaches to curriculum design are based on received practice which is less explicit and less rule-governed. Accordingly, the learning outcomes approach requires a gathering together of knowledge and experience that resides with employers, teachers and others. In part, this is achieved by the representation and consultation processes described above. However, it is also served by the participation of individuals or teams who have already gathered together knowledge, accumulated experience and mastered rules and have an understanding of what various stakeholders want. These are often named experts, and their role consists in writing learning outcomes, facilitating working groups, organising consultations and ensuring that the often complex rules are followed.

Experts work alongside stakeholders to design outcome-oriented curricula and, in some countries, they are employed to validate curricula, i.e. to review curricula independently. In Spain, the General Vocational Training Council designates experts from regional and national authorities as well as recognised social bodies such as trade unions (see Box 4). Managers of the qualification

development process report that laymen find it difficult to write learning outcomes; for example, there is a tendency to write assessment tasks rather than learning outcomes or to make them overly complex. Indeed, writing learning outcomes is particularly demanding if the outcomes are intended to integrate generic skills or synthesise competences drawn from different occupations. For example, in the case study on Romania, most interviewees pointed out the technical nature of the curriculum writing process, the distinct structure of the curriculum and the jargon that is used in the curriculum document. These act as barriers for employers and other social partners to having direct involvement in the writing of the local curriculum (Romanian case study).

Experts may be employed by local or national curriculum agencies or by awarding bodies. They may be civil servants or self-employed consultants. Where institutions or stakeholder organisations may deploy experts, this can give them additional authority and influence. However, on occasion, there are tensions between the role of experts and the role of other stakeholders.

Box 4 Curriculum in Spain

In Spain, there is an established procedure for creating the working groups responsible for designing the written curriculum. The General Vocational Training Council designates experts from regional and national authorities as well as recognised social bodies such as trade unions. That expertise is expected to include competence in the professional field, knowledge of relevant technologies and experience in training processes. Professional and technological experts contribute largely to the writing of the competences, while the training experts contribute to the writing of the training modules. INCUAL (the National Vocational Qualification Development Agency) provides methodological and administrative expertise and pays for the work performed by external experts.

Particular autonomous regions are asked to take the lead in the working groups corresponding to particular vocational sectors, depending on their previous experience and regional economic specialisation. As a result, there are currently more than 40 groups organised into 26 professional families. The working group for land use is based in Andalusia; that for manufacturing and installation and mechanical maintenance is based in the Basque country; energy and water, in Navarre; image and sound, in Catalonia; wood, furniture and cork, in Valencia; transport and vehicle maintenance, in Castilla y Leon; arts and crafts, in Castilla-La Mancha; and maritime and fisheries extractive industries, in Galicia. The activities of these working groups are coordinated by a technical committee (General Teaching Council, GTC) which consists of the directors of institutes for qualification development in each of the autonomous communities.

Source: Spanish case study.

In relatively large countries, such as France and Germany, experts have a well-defined role, taking on the characteristics of a profession to some degree;

expertise in learning outcomes is accumulated and recognised. Experts play a leading role in what might be described as a relatively technocratic process. The German system has already been identified as one with a high level of engagement from a diversity of national, regional and local stakeholders. There is a shared understanding of the rules of the game and of the benefits of negotiation and compromise. It is reported that the fact that different stakeholder groups often employ education and curriculum experts helps them to work with one another; in other words, a shared culture of expertise – or community of expert practitioners – helps to bridge conflicts of interest.

In smaller countries and countries where learning outcomes approaches are newer, there often tends to be a less developed community of experts and a less developed culture of expertise. Teachers may be commissioned to write outcome-oriented curricula, e.g. in Romania. The processes of development are likely to be less elaborate or extended. For example, the development of occupational standards may be based on consultation rather than research, and the statement of the qualification and education standard may be relatively concise, with much of the curriculum design delegated to local schools or trainers, as, for example, in Finland, Ireland and Norway.

Where expertise is not available, this can cause delays in the curriculum design process. For example, in the UK (England), an awarding body reported a delay because of difficulties in identifying an expert capable of writing assessment criteria for a qualification for cabin crew. In some countries, such as Cyprus and Malta, foreign experts have been brought in to design systems, to help write learning outcomes and to validate processes and research. Transfer of expertise was important in the genesis of thinking about learning outcomes in many central and eastern European (CEE) countries before EU accession, such as Bulgaria, where PHARE projects played a role in upgrading qualification standards in VET and in introducing learning outcomes.

6.5. The role of vocational schools

Outcome-oriented approaches usually make an explicit distinction between the manner in which the written curriculum is defined at national level and subsequently specified at school level. This document may be known as the training programme or the scheme of work or sometimes simply as the curriculum. In this research, it is defined as training or learning standard to distinguish from the other parts of the written curriculum (see Table 3). The amount of detail included in this document varies: it depends on the level at which it is written and who is involved.

6.5.1. Developing national training standards

Training standards may be produced at national level. It is challenging for individual vocational schools to produce new training standards – a collaborative approach can help. In Hungary, in addition to the professional and examination requirements document, there is a further document known as the common curriculum. This sets out modules and provides some of the detail that one might expect to find in a training programme. However, it is not mandatory. Schools may depart from the common curriculum, but many will be guided by it.

In Ireland, under the common awards system, vocational schools that wish to provide a particular award are obliged to design a training standard (training programme) that must be submitted to the regulatory authority (FETAC) for approval. In the case of professional cookery, Fáilte Ireland (FI), a sectoral body acting for a consortium of vocational schools, led the process to generate a shared training programme which has been jointly submitted and approved. The advantage of this approach is that the sectoral body was able to engage employers and trainers from across Ireland and was able to draw on the expertise of its staff and resources. The Irish case presented below illustrates the need to strike a balance between the community of practice, where teachers used to have a key voice, and the needs of employers. This reconciliation of interests is at the heart of designing outcome-based curricula (see Box 5).

6.5.2. Developing school-based training programmes

In all case studies, schools were expected to prepare a school-based training programme (also defined as training standard in this research) that implements the learning outcomes set out in the national written curriculum. However, there are different understandings of how much discretion each school enjoys and what is involved in developing a school-based curriculum. In most countries, there is no formal process of validation, although, in some countries, inspectors will check whether the local curriculum does match national requirements. In the Czech Republic, for example, schools are required to prepare a school-based educational programme which draws on the vocational competences defined at national level. In Slovenia, schools are expected to conform to national standards, but there is some discretion: schools are given freedom to provide options in addition to national requirements, which leaves room for local flexibility.

Box 5 Collaborating to produce a shared training standard in Ireland

The design of the national traineeship was led by Fáilte Ireland (FI), and much of the work was delegated to teaching and training professionals from vocational colleges and institutes of technology. Teachers working in pairs or small groups were entrusted with the task of taking the learning outcomes set out in the qualification standard (the award) and re-organising them into 20 training modules to be taught over two years. They had to reformulate learning outcomes, set out indicative content, allocate hours and agree weightings of content.

This process allowed teachers to interpret the learning outcomes that they received in the light of their own values and practice. For example, an experienced trainer and chef was able to group learning outcomes into a module in such a way that it enabled him, and other like-minded trainers, to teach a module around the larder – that is, to emphasise the importance of the raw materials for cooking. For this practitioner, this way of teaching constituted an important value position, one that aimed to preserve vital traditions and standards within professional cookery over time. In this example, it is evident that the training programme creates an emphasis which is not so prominent in the award (the qualification standard) – an emphasis on traditional expertise, practice and craftsmanship.

Technical experts were employed to edit the outcomes of these sessions and develop them into a set of training documents. These were submitted to FETAC and were duly validated. The resulting training programme holds credibility with trainers and with employers. It was produced within 12 months and enabled a new award to be delivered in vocational schools very soon after the award itself was completed. Dividing the development process into the development of the award (the qualification standard) and the development of the programme of study (the training standard) made it easier for Fáilte Ireland to run the development process and consultations in a linear fashion and to engage stakeholders. Professional chefs were consulted on the development of the award, and trainers were involved in the writing of the programme of study.

Source: Irish case study.

In Denmark, it is expected that the national vocational curriculum will be operationalised by each school's teaching team, working together with the local trade committee. This results in the local education plan. The process is formally regulated and has been designed to ensure that social dialogue operates at local as well as national level. Changes in the funding system have given colleges more control over funding, which means that they can, in practice, give greater priority to different parts of the curriculum. Furthermore, those employers who are well represented in the local trade committee were able to exert a significant influence on the design of the local education plan.

The case studies conducted for this research revealed some examples of elaborate and extensive curriculum development activity at school level (see Box 6). These do show that curriculum development at local level may take account of local employment opportunities and the training opportunities provided by local businesses. In most cases, but not all, they involved some kind of partnership. In

two of the three examples that follow, a particular business has played a key role in writing or co-producing the local curriculum.

Box 6 School-based curriculum design in Slovakia

Reforms introduced in Slovakia in 2008 have decentralised curriculum design to school level: around 50-60% of the curriculum is now deemed to be under local control. This leaves a significant space for the VET schools to adapt their curricula to local demand, needs and possibilities. The schools may now devise the teaching process in the light of the preferences of local stakeholders. Local curricula are not centrally validated, but national inspections are required to verify whether the local curriculum fulfils national requirements.

Vocational schools are required to devise a training programme which includes a local statement of learning outcomes (the graduate profile): a statement of the graduate's key, general and vocational competences. In addition, the training programme sets out the sequence of modules, resources, environment, pedagogy, requirements for teachers, evaluation and assessment requirements, etc. There is an expectation that the training programme will restate learning outcomes in a locally-contextualised form. This appears to encourage local innovation. The legislative framework allows but does not require the participation of the social partners in the local curriculum design process. The VET schools have created school councils which consist of representatives of the students, teachers and school management as well as parents and employers. The council is included in the process of the curriculum design: it may propose amendments in the drafting stage and approves the final version.

The degree of employer participation differs according to the relationship of the particular VET school with local employers. In most cases, employers express their expectations and demands on graduate profiles via informal communication networks with managers of the school. One of the schools visited had conducted a local survey of employers. Employers were appointed to the governing body of schools. They may also exert direct influence on the teaching process through sponsorship schemes, most frequently by donating machinery to the school which the graduates will be expected to master before entering employment. Sometimes, employers finance the establishment of sophisticated workshops and provide training for teachers on how to operate the donated machines. For example, one school has established a centre of vocational education in partnership with PSA Peugeot Citroen. The partnership was underwritten by agreement at national level and has been supported by national funding for investment and training. PSA Peugeot Citroen has provided training and equipment as well as internships.

Such bilateral agreements are believed to be mutually beneficial by employers and schools: schools lack up-to-date equipment and employers find it hard to recruit labour with appropriate skills. Head teachers point out that the investment that schools gain will be of benefit to many students, not just those who may be recruited by the investing companies. Companies will benefit from the creation of a pool of qualified graduates from which they can recruit.

Source: Slovakian case study.

Where national curricula are relatively holistic and abstain from prescriptive detail, trainers in enterprises (see Box 7 on Norway) or teachers in vocational schools (see Box 8 on Poland) have considerable discretion to develop their own training programmes. In the latter case, as a result, appropriate pedagogies were developed in advance of national implementation. Teachers in vocational schools in Germany feel that learning areas (*Lernfelder*) allow them to use their own personal expertise and experience to decide what is essential and what is of lower priority. The design of the learning areas also encourages teachers with different specialisms, for example electrical and mechanical engineering, to collaborate on the design of educational projects.

In some countries that have undergone significant decentralisation in the past, e.g. Sweden, there has been a reduction in the discretion available to schools and municipalities. This is because the wide variety of programmes has been seen as reducing the articulation between education and the labour market. Current Swedish reforms are designed to reduce the number of local lines of study, and permission for a new course must be obtained from the National Agency for Schools (*Skolverket*).

This research did reveal some examples of how, in two countries, the curriculum is developed at local level. In Norway, for example, companies collaborated on writing a 'training plan' which was then delivered by a shared training centre (see Box 7). In Poland, a network of teachers has come together in an EU-financed initiative to create a modular curriculum which they are sharing (see Box 8).

6.6. Challenges to curriculum design

6.6.1. Encouraging employer engagement

In many countries, interviewees reported that there were difficulties in engaging and sustaining employer contributions to curriculum development. This was the case both where outcome-oriented approaches were relatively new and where they were well established. Agencies and colleges that had enjoyed some success in generating employer engagement invested in resources and specialised personnel to develop and maintain relationships.

Box 7 The training plan at 'N' company in Norway

'N' company was set up in 2008. It took advantage of the changes brought about by national reform in vocational qualifications: local employers saw the reform as an opportunity to meet their need for apprentices. The structure of learning outcomes and the emphasis on local curriculum design meant that they could develop curricula tailored to their own requirements. 'N' company is funded and directed by three engineering companies operating from a technology park in Kongsberg. It currently recruits around 20 apprentices each year. 'N' company is unusual in Norway, where most apprenticeship training is provided through local apprenticeship offices.

The learning programme was referred to as the training plan (TP). It consists of a more detailed version of the competence aims set out in national curricula. Each competence aim is unpacked and described as a more detailed set of aims. Sometimes these more detailed aims are company-specific. Accordingly, there is a high degree of tailoring of the aims at this level.

'N' company is still in the process of developing and refining a full set of training plans: not all are regarded as complete. However, a guiding philosophy is that all apprentices should receive training that is broader and more detailed than that required by the curriculum. It was commented that it requires a significant amount of effort to write training plans – possibly 2-3 years; it would be difficult and expensive for one company to do this on its own, hence a reason for this company wanting to collaborate at this level.

The instructors have industry rather than teaching backgrounds, while the training manager has 23 years' experience teaching and came to the centre from the post of head of the electronics department at the local school. His dialogue with instructors plays a key role in forming the TPs: 'They [the instructors] make the plans, but I write them down'. The TPs had to be formulated in simple terms to ensure they are easily understood by the apprentices.

Source: Norwegian case study.

It is not always easy for small organisations to sustain commitment, for example, to participation in working groups. Where employer and employee organisations have officials who work full-time on educational matters, they may be able to sustain this involvement (see Cedefop, 2009c), but this is more difficult for smaller businesses and organisations. In Denmark, for example, larger companies that employ a staff member with responsibility for training will be able to exert a considerable influence in defining learning outcomes in the local curriculum, even though it is small and medium-sized companies that take the majority of apprentices.

Box 8 Module employment skills (MES) programme in Poland

In Poland, the current system of curriculum development is perceived to be over-centralised and dominated by theoretical content which encourages traditional modes of teaching. Nationally, the process for developing curricula is being reformed, but the new curricula have not yet been implemented. In the meantime, an EU-funded initiative provides a modularised training programme for about 10% of vocational schools, while the other 90% of schools continue with traditional vocational curricula. This initiative offers an opportunity to experiment with an outcome-oriented curriculum and develop appropriate pedagogies in advance of national implementation.

A working group, based in Poznan, includes teachers, head teachers and representatives from national ministries. The group has access to surveys with employers about skills needs. Their task has been to create a training programme that is consistent with the national curriculum that has not yet been implemented. The work of developing the modules was distributed between the participating schools; each took responsibility for writing particular modules. The modules amount to between three and six months' study time, but they are broken down into submodules, each lasting about two weeks. Each module concludes with an assessment. The modules focus on realistic projects and case studies; accordingly, in participating schools, pedagogy has shifted from a largely theoretical style of knowledge transmission to a predominantly active or practical mode. Learning is structured around practical assignments where theoretical and practical learning are combined. This contrasts with pedagogy in non-participating schools, where lectures dominate and practical work is dominated by demonstrations by teachers. In addition, one of the schools has entered into an agreement with an employers' association representing producers of elevators. This agreement arose from negotiations between the association and the school's governing body and has led to significant investment in the school and the school developing, within the framework of the MES, a specialist module, maintenance of elevators, reflecting the needs of the elevator industry. Employers who helped to design the module visit the school to help teach it, and students attend practical training in the companies.

The MES programme has been supported by extensive professional development. Each participating teacher has received 200 hours of training to address the curriculum and the new pedagogies. This training was carried out both in and outside school. Schools have benefit from EU financed investment in learning spaces and equipment. The MES programme is not supported by state-approved textbooks, as is the case with traditional vocational programmes, but by teaching and learning materials prepared by the consortium and shared electronically. Adopting the MES programme has made considerable demands on timetabling which needs to be adjusted some eight times per year as the module changes. Modules are permitted to extend between semesters and across academic years. The organisation of study and assessment are perceived to be considerably more demanding than in the past.

Students interviewed reported that they prefer the greater emphasis on practical learning. There is evidence of improved student engagement and improved relations between teachers and students. Nevertheless, students were concerned about the challenging nature of some of their learning materials and the volume of work demanded of them.

At this point in time, it is not known whether learning from the Poznan MES is being shared more widely and whether it is informing national developments. There is evidence that other vocational schools are looking to modernise their curricula and pedagogy, but they currently lack resources and support.

Source: Polish case study.

6.6.2. Balancing different interests

The outcome-oriented approach recognises that there is likely to be a conflict of interest between stakeholders; however, processes can be developed to negotiate or reconcile any differences – at least to some degree.

Getting the sectoral/occupational scope right is a difficult area for decision-making. Employers sometimes expressed the view that they want students to acquire the competences which are useful for their business or industry. However, in IVET, governments increasingly favour relatively broad curricula that correspond to an entire sector rather than a specific industry or occupation ⁽²⁶⁾. In Norway, for example, there is a four-year programme which allows progressive specialisation. Employers expressed the concern that students commencing year three have relatively little knowledge about engineering and mechatronics. There is a trade-off between the interests of different employers (in local firms, in the industry and the sector more widely), the interests of students and the interests of schools. Setting the vocational scope of qualifications and programmes is usually performed at a relatively high political level; it is not always easy to carry out the kind of detailed consultation which is required to make the best decisions and build consensus. It was found that it was not only employers who raised concerns about broad qualifications; some students expressed concerns too. For instance, students in one country were concerned that a programme that served both gastronomy and tourism was too broad and that it would not provide the in-depth specialisation required to obtain employment in one or the other domain.

This research also confirmed the findings of Cedefop (2010a) that stakeholders sometimes disagreed with respect to issues of image presented by qualifications, with respect to social and occupational mobility and with respect to how qualifications might influence entry standards and collective agreements on salaries. Employers raise the question as to whether skill levels should be set for average requirements across the industry or to match the needs of more advanced employers. Where there is a persisting craft identity, trainers express the view that trainees must acquire certain skill levels, even if they are unlikely to be required in many jobs, because these are constitutive of what it means to claim that vocational identity. In Slovakia, a decision has been taken, at national level, to design outcome-oriented modules that cater to the needs of an average-ability student rather than those of a high-ability student.

While, in general, there is agreement that transverse skills are important for all students in all vocational programmes, there are disagreements about how

⁽²⁶⁾ Until recently, this was also the trend in the UK (England). However, recent policy has called for a renewed focus on occupational as opposed to broad sectoral qualifications.

much weight they should be given. The conflict of interest is heightened when the functions of qualifications or curricula are multiple and more diverse stakeholders are involved, for example if qualifications or curricula are intended both to signal competences to the labour market and to determine the competition for places in higher education.

6.6.3. Expense, time constraints and other risk factors

An elaborate process for the development of outcome-oriented curriculum is expensive both to establish and to sustain. Learning outcomes approaches are likely to involve more research, more separate stages of development, more expertise, greater regulation and more consultation. Although EU co-financing has been important in several countries (e.g. Poland and Spain), additional funding towards the teaching of these programmes was removed as part of austerity measures.

Furthermore, the development of outcome-oriented curricula may be slow. Typically, it may take two to three years to review, revise and authorise an outcomes-based curriculum. The more extended approaches may then risk being interrupted by political and economic change.

Other risk factors concern the overall complexity of outcome-oriented curricula. Cort (2010) and Wolf (1995) have commented on complex curricula in Denmark and the UK (England). Sørensen and Størner (2009) have revealed the complexity of individual learning outcomes in curricula in Denmark and questioned whether they are understood in the same way by different users. Others have suggested that new curricula should be piloted before they are rolled out nationally to avoid mistakes in design (Oates, 2007).

Local variation between curricula may also increase complexity. While local variation is generally welcomed as a way of adapting curricula to the interests of local employers and communities, some interviewees expressed concern that this could create barriers to mobility. In some countries, such as Sweden, recent reforms have sought to reduce the number of local lines of study, which was deemed to result in excessive variation in the knowledge and skills of students from different schools. Local variation may also lead to additional burden for teachers, particularly for those responsible for writing local curricula. Teachers have to cope not only with multiple changes in curricula but also with other parts of their practice. For example, new curricula may require teachers to develop/apply additional or new assessment practices, to produce their own teaching and learning resources, and to increase coordination and collaboration with other teachers.

6.7. Key findings

The study allows the following conclusions to be drawn in relation to the ways in which different actors are involved in outcome-oriented curriculum design:

- (a) the capacity of learning outcomes approaches to lead to valid and credible curricula depends on effective representation of stakeholders. In the case studies, some examples of strong representation were found, for instance in Austria, France, Germany and Spain. However, in some other countries, representation was found to be either not very extensive or not very effective. In some countries, the introduction of new curricula led to the engagement of stakeholders, but there were concerns about whether this engagement could be sustained. We can distinguish between representation which is achieved by appointing the social partners and stakeholders to working groups and the more extensive (but more superficial) participation which may be achieved through consultation. There is a third dimension of representation which concerns power or governance, i.e. that stakeholders have the ability to influence outcomes;
- (b) where governance is distributed, this provides opportunities for stakeholder representation, and it may increase the capacity of particular groups of stakeholders to make their voice heard and ensure that their interests are protected. Over time, interest groups develop an ability to work together and to find ways to negotiate differences and reach compromises. This may be easier to do at local, regional or sectoral level, as the parties involved have common interests and shared values;
- (c) decentralisation of curriculum-making authority can also encourage relationships between schools and local companies. Curricula written at provider level can benefit both learners and enterprises. They can bring about an adaptation and contextualisation of the curriculum which serve the employment needs of both learners and employers; in addition, they provide a basis for other kinds of collaboration, although it is recognised that there may be some kind of trade-off. These curricula depend on the establishment of partnerships and effective negotiations at local level. The research found that the potential for development of the written curriculum at local level is not always fulfilled. Often, local curriculum-writing is simply a matter of timetabling and sequencing;
- (d) experts play a significant role in informing the development of written outcome-oriented curricula and qualifications, in operating the complex procedures and in working with stakeholders to reconcile differences and solve problems;

- (e) very little evidence of students' involvement in outcome-oriented curriculum design was found. Where consultation does involve students, it becomes possible for learning outcomes to be reviewed so as to ensure that they are intelligible and responsive to learners. Investigative work could be undertaken to explore how the student voice could be given greater weight in the collaborative and consultative processes that serve curriculum design;
- (f) an effective process for generating outcome-oriented curricula should make the introduction of changes possible where these are necessary to meet changing needs. The evidence from countries such as France and Germany that employers are initiating such changes indicates a degree of responsiveness.

CHAPTER 7.

The written curriculum: the form and function of learning outcomes

7.1. Introduction

This chapter analyses the way learning outcomes are formulated and structured in curricula and how they are used to achieve consistency across the development stages. It provides examples to show the different kinds of vocational knowledge, skills and competences that are included in the curricula examined and looks at the different ways in which key competences are incorporated into outcome-oriented curricula. Finally, the types of explicit pedagogical guidance that some curricula include are examined, allowing an understanding of the decisions that curriculum designers have made and of the implications that such decisions will have for the teaching and learning process.

7.2. How do learning outcomes set norms for teaching, learning and assessment?

The form of written curricula is a consequence of the design process which takes account of the needs of assessment, teaching and learning and reflects the competences associated with occupations that are targeted by the curriculum. The different formal properties of written curricula, for example the relationships between different standards and the specificity of learning outcomes, may be understood as resulting from different concepts and different institutions. However, they also represent different ways in which the written curriculum may be constructed as a tool to guide teaching and learning (see Annexes 5-9). These differences in form have consequences for how the written curriculum is interpreted and how it influences the behaviour of teachers and learners (see Chapter 8). The present study has shown that the manner in which learning outcomes are transformed and articulated in curricula will enable or constrain distinctive teaching and assessment methods. For example, if skills and knowledge are formulated as distinct learning outcomes, then they may be taught and assessed separately.

The analysis confirms that outcome-oriented curricula face a challenge in translating descriptions of work tasks (competences) into descriptions of what should go on in training and educational institutions (learning outcomes). The

written curriculum should adapt the learning outcomes so that they make sense and are useful to a wide range of stakeholders, particularly teachers and trainers, but also employers, other educationalists, students, etc. The analysis shows that some approaches preserve the form and substance of the original competences as they are developed into learning outcomes (e.g. in the English NVQ), while other approaches (e.g. the Spanish tourist guide curriculum) transform and reorganise the competences so that they are no longer easily recognisable. The degree of transformation is likely to be greater when IVET is embedded into the national educational system (e.g. the French *bac pro* SEN (*systèmes électroniques et numériques*)) rather than standing apart as a separate system (e.g. the Irish national traineeship).

The transformation of competences/learning outcomes may occur during an early or late stage in the curriculum development process. For example, the learning outcomes set out in the qualification standard may be re-arranged and even rewritten for the training standard (otherwise known as the training programme). This happens, for example, in the case of the Irish national traineeship for professional cookery, and it has allowed those teachers who collaborated to write the training programme with a view to regrouping learning outcomes in a way that reflects traditional training practice in relation to their profession (see Annex 7).

An important difference found in terms of how learning outcomes are formulated between the various written curricula analysed concerns the degree of specificity and simplicity. This characteristic is known as 'granularity', and it is reflected in the language in which learning outcomes are expressed and in the number of learning outcomes that are provided. Designers may be expected or required to keep the learning outcomes very simple; for example, it may be a requirement that learning outcomes are defined by the use of single active verbs. This has the virtue of transparency, and it supports the development of a corresponding dichotomous assessment judgment: either the activity is demonstrated or it is not demonstrated ⁽²⁷⁾. However, a high level of specificity is likely to lead to a large number of learning outcomes, i.e. high granularity. This increases the burden of assessment and, given that assessment has a 'backwash' effect upon pedagogy, it may distort teaching and learning (Psifidou, 2012b). One concern is that a highly analytical, granular definition of competence has the consequence of distancing the competence articulated in VET

⁽²⁷⁾ This is regarded as a *sine qua non* in the design of the English NVQ. Elsewhere, e.g. Finland, the issue has been debated in formulating the new qualifications structure with a move to reduce the grades from five to three, partly as a result of employers' increasing role in assessment.

qualifications and curricula from the more holistic competence actually demanded in the workplace (Hyland, 1994). Another concern is that an excessively granular description of competence reduces the acceptability of VET qualifications as a basis for further and higher study.

The research sought to discover whether there are any systematic differences between IVET curricula with respect to granularity. It appears that some curricula do include large numbers of simple learning outcomes. To make it possible to compare the granularity of different curricula, we have sought to develop a common metric for granularity: learning outcomes per hour of learning time. For example, the Irish leaving certificate defines six distinct learning outcomes for a single 10-hour unit, i.e. a granularity of 1.6. The findings of the curriculum analysis based on the number of specified learning outcomes per hour of learning are set out in Table 5 below.

Table 5 **High, medium and low granularity**

Granularity	Hours per learning outcome	Examples
High	Fewer than 10	Luxembourg (mechatronics), the Netherlands (electronics), Slovakia (engineering), Spain (tourism), Sweden (electronics), the UK (England) (tourism)
Medium	More than 10; fewer than 20	Germany (mechatronics), Ireland (professional cookery), Slovenia (gastronomy and tourism)
Low	More than 20	Bulgaria (electronics), Croatia (electrical engineering), Estonia (electronics), Finland (tourism), France (<i>baccalauréat professionnel</i>), Norway (electronics), Romania (tourism)

Source: Case studies.

This provisional analysis shows how it is possible to make comparisons in relation to how granular learning outcomes are. There is evidence for an association between the degree of granularity and the degree of regulative purpose. A curriculum with a highly regulative purpose is one that seeks to influence the operation of VET programmes primarily through the design of assessment. Some of the most granular outcome-oriented curricula are particularly focused on assessment. For example, the English, Dutch and Luxembourgish qualification standards are all granular; their learning outcomes are used to define assessment criteria. There is relatively little pedagogical guidance in the qualification standards. In contrast, the Croatian, German and Romanian qualification standards examined are less granular and are associated with a relatively high level of didactic guidance.

However, there appear to be other factors at play. In some standards, learning outcomes are relatively holistic, but the prescription of teaching and assessment is provided through the specification of knowledge, e.g. in France, or the specification of key competences, e.g. in the Netherlands. In Iceland and Ireland, there is an explicit intention to restrict the degree of prescription at the level of the national standard so as to leave space for specification at local programme level.

A highly regulative outcome-oriented curriculum may serve, in some countries, as a means to regulate a relatively unrestricted market for VET provision. Rather than regulating the quality of providers or their entry into the VET market, the State uses the written curriculum to ensure the quality of VET provision by specifying which learning outcomes will be assessed. The manner of this quality assurance varies between countries. In France, for example, a relatively prescriptive curriculum is achieved by combining holistic vocational outcomes with demanding knowledge requirements. In the case of the United Kingdom, learning outcomes are relatively granular ⁽²⁸⁾. In the Netherlands, assessment is informed by a relatively complex set of requirements in terms of key competences.

Where VET provision is highly regulated and there is institutional ownership of VET standards ⁽²⁹⁾, there is less of a need for the State to assess the quality of the service provided. Indeed, if the State seeks to introduce more regulatory curricula, it may face some resistance from the bodies that traditionally have controlled VET provision, such as craft organisations and the local chambers of commerce in Germany. However, if the State in such countries wants to assume greater responsibility for the quality and appropriateness of VET provision, then it is likely that it will look for ways of making the written curriculum more prescriptive. It may seek to do this by greater precision in learning outcomes, by additional pedagogical guidance or by a combination of both.

⁽²⁸⁾ In the UK (England), not only are the learning outcomes relatively granular but the qualification standards into which learning outcomes are collected are unitised. In addition, both of the case study curricula analysed are 'composite qualifications', which is to say that each is designed as a framework which incorporates a number of other qualifications.

⁽²⁹⁾ There are organisations that are involved both in the design of the qualifications and in their provision.

7.3. How do learning outcomes address key competences and generic skills?

The EU policy on key competences challenges Member States to address these competences through lifelong learning, including IVET curricula (European Parliament and Council of the EU, 2006). Since 2006, the reference framework has contributed to reforms of school curricula and vocational programmes of learning in the Member States. A number of countries have used it to plan curricula (Austria, Belgium, the Czech Republic, France, Hungary, Iceland, Latvia, Luxembourg, the Netherlands, Poland, Romania, Slovenia and Spain) and to structure, in particular, cross-curricular work (Belgium, Croatia, Hungary, the Netherlands, Poland, Slovenia and Spain) (European Commission, 2009).

The EU's eight key competences are intended to guide all educational activity and to permeate every specialised curriculum. Cedefop's learning outcomes approaches in VET curricula distinguishes the use of learning outcomes within units from their systemic use to guide the entire education system or to set out the general objectives of a study programme (Cedefop, 2010a). However, there is more than one way that the VET system can ensure that all high-level learning outcomes are addressed. One way of achieving, for instance, a wide range of learning outcomes is to make it compulsory for vocational students also to follow a number of general subjects, for example mathematics, national language and literature. The different learning outcomes may then be addressed in the most appropriate subject. An alternative strategy is to write learning outcomes that integrate key competences with vocational competences. In practice, on the basis of the curricula analysed, it was found that some systems and institutions combine these strategies – at least to some degree.

The first approach, where vocational curricula combine key competences ⁽³⁰⁾ and generic skills ⁽³¹⁾ with academic subjects, is usually found where vocational programmes are integrated within a broad national upper-secondary curriculum. Accordingly, students study conventional academic disciplines alongside their vocational training. It follows that the curriculum experienced by the learner is broader than the vocational option they have chosen. The relative weight given to general and vocational learning outcomes varies between countries and within countries, and it sometimes varies depending on the institution.

⁽³⁰⁾ As defined in the recommendation on key competences for lifelong learning. OJ L 394, 30.12.2006, p. 10.

⁽³¹⁾ By generic skills, we mean those skills that apply across a variety of jobs and life contexts, i.e. skills that are transferable and not occupation-specific (European Commission, 2011b).

In most countries, vocational and academic subjects ⁽³²⁾ are quite distinct. They are allocated time and are taught and assessed separately by different specialists. This is the situation in virtually all of the countries studied. Where the vocational curriculum is just one component of a broader curriculum, it is likely that it is the broad curriculum (not the vocational element) that is expected to deliver civic, cultural, transverse and other competences. These disciplines may be described either by learning outcomes or in some other way. In the curricula investigated in the Czech Republic, Estonia, Finland, France, Latvia, Lithuania, Slovenia and Sweden, the curriculum is organised into subjects, with the vocational specialism being taught as one or more subject or subject module among others.

This way of structuring the curriculum is transparent: it reveals the heterogeneous sources of the IVET curriculum which is drawn from an analysis of work requirements, from academic subjects and from other social, political and educational objectives. A curriculum is segmented where vocational, academic and transverse/generic learning outcomes are identified separately in separate units. They are usually taught and assessed separately as well. In practice, this means that the integrity of traditional disciplines is preserved, and there is relatively little blending between these disciplines and vocational learning.

The second approach, where vocational curricula integrate or incorporate generic skills and key competences, was found to be more common among curricula that guide alternance programmes (such as the hospitality curricula reviewed in Germany, Liechtenstein and the Netherlands, and the mechatronics curricula). These curricula do seek to integrate generic skills, either by mapping them across the units or by embedding them so that they are assessed in conjunction with other learning outcomes. Work-based learning is a substantial and compulsory part of alternance programmes. This being the case, it makes sense for generic skills to be incorporated in a manner that makes them relevant and applicable to the work situation and purpose – rather than their being handled as a separate subject.

The decision to write learning outcomes that integrate generic skills and job-specific skills may be understood as an attempt to write learning outcomes that engender teaching, learning and assessment in a way that reflects the realities of the learning environment. However, it also represents an ambition to reflect the complex and hybrid character of the competences that workers require, for example the fact that a French electrician may have to explain operating

⁽³²⁾ Traditional academic material is expressed in terms of subjects and subject categories rather than learning outcomes, although this is changing in some countries.

instructions written in English to a French client. This could have considerable implications for the way in which a programme is taught and assessed, e.g. students could be expected to develop and demonstrate job-specific and generic skills in projects or in the workplace rather than in separate lessons and examinations. In this way, an outcome-oriented curriculum may give some guidance as to how transverse learning outcomes might be taught and assessed in relation to vocational learning outcomes. Responses from interviewed learners suggest that this is often what they want, since learners were more appreciative of generic skills when they were integrated into vocational learning or into work placements than when they were offered as stand-alone instruction.

Curricula which integrate generic skills and job-specific skills into learning outcomes may be understood as an advanced form of the learning outcomes approach (see Boxes 9 and 10). In the UK (England), transverse skills are incorporated in the form of additional key skills qualifications, alongside the other qualifications that make up the apprenticeship in travel services. Key skills qualifications are composed of outcome-oriented units; they are assessed and recognised separately. They may be taught in a specialised or integrated manner, depending on the provider. In Ireland, the FETAC professional cooking award includes modules that address personal, social, IT and employability learning outcomes. In Romania, separate units with key competences are incorporated into the technician in tourism curriculum: foreign language learning was taught jointly with a selection of vocational learning outcomes, for example letter writing, talking to clients, obtaining information, etc.

In principle, an advantage of the outcome-oriented approach is that transverse skills and key competences may be taught or even assessed in a cross-curricular manner (see Box 11). This may be supported in curriculum design by threading transverse competences through other units or, more minimally, by providing a mapping of where particular transverse and key competences might be addressed (e.g. in the Hungarian travel agent qualification, personal and social competences are mapped in this way). Threading does occur in the Irish national traineeship, where teamwork, for example, is to be taught and assessed through specific elements of the culinary techniques module referred to above.

Box 9 Key competences in the tourist travel counsellor programme in Finland

In Finland, in the tourist travel counsellor programme, key competences for lifelong learning are included within the national qualification requirement as separate assessment targets (which effectively act as learning outcomes). Accordingly, in the compulsory customer service module, assessment targets are structured as follows:

- mastering the work process – four targets;
- mastering the work methods, equipment and materials – two targets;
- underpinning knowledge – eight targets;
- key competences for lifelong learning – four targets.

At local level, the local curriculum plan sets out how these key competence targets are to be assessed – either as integrated elements through skills demonstrations or through classroom-based assessment. The assumption in policy is that key competences will not be taught separately but acquired and consolidated through practical activity and on-the-job learning. In other words, at the level of the national written curriculum, key competences are not formally integrated with vocational learning outcomes but are integrated into units. The re-integration of vocational learning outcomes and key competences occurs at school level through assessment design.

Source: Finnish case study.

Box 10 Boosting key competences in outcome-oriented curricula in the Netherlands

In the Netherlands, key competences have been integrated with vocational learning outcomes in a sophisticated and systemic fashion. In total, 25 key competences have been defined at national level. These are then mapped against learning outcomes that are defined in terms of work tasks and processes. In this way, the qualification standards (known as a qualification files) are based as much on key competences as on occupational competences. The granularity of key competences has increased, while that of vocational learning outcomes has been reduced. This engenders performance indicators and training programmes that emphasise both an ability to ensure skills and knowledge transfer and occupational mobility. This reform is a response to the concern that vocational qualifications in the Netherlands were too numerous and too specialised.

Source: Netherlands country review.

Box 11 Cultural and civic competences in outcome-oriented curricula

Where the IVET curriculum is embedded in a broad national curriculum, these cultural and civic competences are likely to be delivered either through other subjects, such as the study of national literature and history, or through sessions dedicated to citizenship. This is the case in those countries where vocational programmes are delivered in mainstream upper-secondary schools, e.g. Sweden, or in specialised upper-secondary schools that participate in the national curriculum, e.g. France and Slovenia. These requirements are sometimes reinforced by a high-level statement of general educational objectives or competences, for example France's *socle commun* and Scotland's curriculum for excellence. The French *socle commun* applies to compulsory education and includes cultural education, citizenship and autonomy as well as objectives expressed in terms of traditional subjects.

Where alternance is a dominant mode of VET provision, learners will spend less time in schools, and it might, therefore, be expected that less attention will be given to cultural and civic competences in contrast to school-based systems. This is the case with the Irish and English apprenticeships where no competences or learning outcomes relating to cultural or civic competences are included in the curriculum. In the case of the German mechatronics standard, however, there is an explicit general requirement that economic, political, social and ecological issues are addressed. Vocational schools are required to contribute to 'general education' by addressing, as far as possible, core contemporary problems such as unemployment, peaceful co-existence and cultural identity. Social competences are expressly included in the curriculum, for example to develop mutual understanding with others, to confront differences of opinion, and to develop social responsibility and solidarity (*Kultusministerkonferenz*, 1998). These general requirements find further expression in the detailed statement of learning objectives, competences and content; e.g. in the learning area relating to initialisation, troubleshooting and repair, students are required to understand the influence of mechatronic systems on economic, ecological and social relationships. The Austrian apprenticeship also includes civic and cultural competences, but the Dutch standard does not. In the Netherlands, active citizenship and lifelong learning are covered not by the VET qualification design process but by separate assessment procedures issued by the government (these are separate requirements that are not included in the VET curriculum). Schools are responsible for the teaching and learning of these learning outcomes and have some discretion which leads to much variation in extent and quality.

Standards which apply to programmes targeted at older students who have completed the national curriculum, such as the programmes investigated in Spain and Hungary, do not usually include broader civic and cultural competences. These students are understood to have completed this kind of learning during the phase of compulsory education.

Source: Country reviews.

7.4. How do outcome-oriented curricula address pedagogic guidance?

Analysis of the manner in which pedagogical guidance is addressed suggests the following typology for curricula with varying levels of pedagogical guidance: high, intermediate and low or none.

The curricula examined in the Czech Republic, Estonia, Finland, France, Greece, Hungary, Ireland, Lithuania, the Netherlands, Norway, Slovenia, Spain, Sweden and the UK (England) (travel services), were found to be regulative, that is they included virtually no pedagogical guidance (see Box 12). However, in a number of these countries, pedagogical guidance may be available outside the written curriculum, for example through websites and handbooks (e.g. Ireland and the Netherlands). In the Netherlands, the agency that designed the mechatronics qualification also produces a pedagogical guide. In Croatia, a pedagogical handbook is planned. It is not known what difference it makes to teachers whether guidance is incorporated into a single authoritative curriculum document or whether it is distributed across a number of official publications and websites. This may give teachers greater discretion; it may also lead to tensions if guidance and assessment appear to pull in different directions ⁽³³⁾.

By 'intermediate-level pedagogical guidance' is meant that there is some guidance about teaching and learning styles and time use; however, it is restricted in volume and substance. Croatia and Hungary provide good curriculum examples of intermediate-level pedagogical guidance (see Box 13). In Croatia, for example, the description of knowledge and topics retains a very powerful presence in the new qualification standard. Teachers are given guidance on how to allocate time between theoretical and practical activities, and there are recommended textbooks for teachers and students.

⁽³³⁾ This may have occurred in the case of the diploma in the UK (England) where assessment bodies favoured a linear and unitised teaching and assessment process while some of the expert networks favoured more thematic and contextualised approaches.

Box 12 Curriculum examples of low-level pedagogic guidance

Pedagogical guidance in the Slovenian gastronomy and tourism curriculum is limited to a statement of the total number of hours per module and a prescription for striking a balance between theoretical and work-based training in the programme as a whole. However, the manner in which the curriculum is stated does appear to correspond to pedagogic practice in the taught curriculum. The learning outcomes are granular and include a significant amount of knowledge.

The Irish qualification standard provides no guidance at all on pedagogy. However, detailed and extensive guidance on pedagogy is provided in the professional cookery traineeship document which describes the training programme. Teachers from vocational schools were given a major role in the writing of this document. In the traineeship document, trainers are provided with a highly detailed specification of the indicative module content. For example, the module for culinary techniques (a 150-hour module) is broken down into nine parts which are weighted for assessment purposes. Each of these nine parts details extensive content. For this module, the training standard provides a page of guidance (which discusses sequence, integration of transverse skills, formative assessment and health and safety) and two further pages listing textbooks and websites.

The French system does not set out explicit instructions to teachers. Indeed, it is an explicit formal characteristic of the *baccalauréat professionnel des systèmes électroniques et numériques* that it is defined in such a manner that it may be achieved in different modes: in a vocational school, through apprenticeship, through CVET or through APL. The main prescriptions given to teachers and trainers in this document relate to the enterprise period. The text provides a general prescription setting out how work-based learning should be organised and describing the role of the work-based mentor, etc.

Source: Slovenian, Irish and French case studies.

Box 13 Curriculum examples of intermediate-level pedagogic guidance

In Croatia, a unit on technical drawing is assigned three hours per week during the first year. Furthermore, 33% of the time is allocated to theoretical training, a further 33% to practical training and the final 33% to computer work. There is additional pedagogical guidance which makes it clear that teachers should not restrict themselves to traditional didactic methods. Teachers are recommended to use verbal, visual and practical methods (oral presentations, discussion, demonstration, writing, simulation, case studies, brainstorming and workshops).

In the Hungarian tourism curriculum, there is guidance about the type and balance of teaching and learning activities; e.g. in relation to the element on bank transactions, it is recommended that learners spend 10% of their time doing professional activities in groups with support and 40% of their time doing independent professional tasks under supervision, etc. The document also provides guidance on the hours of practical and theoretical lessons and the location of lessons, e.g. the use of IT rooms.

Source: Croatian and Hungarian case studies.

By ‘high-level pedagogic guidance’ is meant that there is detailed guidance in relation to how particular units or even learning outcomes might be taught. This goes beyond references to timing to identifying particular teaching styles and learning activities. Here, two differing examples of curricula that offer high-level pedagogic guidance are considered: the Romanian and the German curricula (see Box 14).

Box 14 Curriculum examples of high-level pedagogic guidance

The Romanian national curriculum document for the technician in tourism programme includes a statement of vocational competences, detailed assessment criteria and pedagogic guidance for each module of the programme. The pedagogic guidance specifies which learning outcomes should be delivered through practical work and which in a classroom and allocates teaching time between practical and theoretical learning for the module as a whole. It goes on to list appropriate teaching and learning materials (e.g. case studies, simulations, online resources). According to Cedefop (2010a), this curriculum may be regarded as having a strong didactic character – at least for some units. The holistic learning outcomes are supported by a very brief contents section. This is followed by an extensive section on pedagogy which describes and justifies a pedagogy based on a business simulation. There is limited guidance on assessment: the school has discretion as to what combination of methods to use.

The German dual system curriculum has also been described as didactic rather than regulative (Cedefop, 2010a). However, the German training ordinances that function as the curriculum for enterprise-based learning are not strictly didactic because these documents do not provide explicit guidance on pedagogy. However, these training ordinances set out how many weeks each learner will spend addressing a particular aptitude and during which year of their apprenticeship. They are able to do this because the training programmes are collectively designed and highly regulated. It is not so much that the curriculum dictates pedagogy as that the well-established industrial and school practices of training are reflected in the curriculum.

Source: Romanian and German case studies.

However, explicit pedagogical guidance is just one way in which the written curriculum may seek to influence pedagogy. The inclusion of extensive content (for example in Croatia and Ireland) and the setting of new assessment demands (for example in France, see Box 15) were also reported to have an impact on pedagogy. The following chapter presents additional factors that shape the teaching and learning process.

Box 15 **Shaping pedagogy through assessment in France**

Controlled assessment, CCF (*contrôle en cours de formation*), is an important development in France. It shapes the way in which the assessment standard affects pedagogy. These assessments are intended to assess learning outcomes in the course of training, when learners are ready. Teachers are able to design these assessments so that they are authentic in relation to professional tasks. There is an expectation that they are designed to take account of both the learning outcomes in the qualification standard and the professional tasks defined in the occupational standard. Teachers design a matrix of assessment (*grille d'évaluation*) that configures realistic or real work activities, learning outcomes, evidence descriptors and the weighting (or co-efficient) awarded to each learning outcome. This kind of assessment encourages teachers to place more emphasis on learning through authentic tasks. CCF is part of summative assessment; however, preparation for CCF is shaping pedagogy and formative assessment.

Source: French case study.

7.5. **Key findings**

The form and function of written curricula differ from country to country and even within the same country depending on the type of VET and qualification in question. The present analysis allows the following conclusions to be drawn:

- (a) outcome-oriented curricula are expected not only to define the various elements of learning – the learning outcomes – but also to provide assurance that these elements are coherent and may be combined and made useful and intelligible. This is a common expectation for all outcome-oriented curricula; there are different ways in which this coherence is addressed, for example through overriding high-level competences and through transversal skills, units, modules, work placement and assessment practices. Assessment criteria, content, detailed knowledge requirements and pedagogical guidance work together with learning outcomes to guide teachers and trainers. This means that curricula become complex and teachers will need to decide how much importance to give to different parts of the written curriculum. This may serve to give teachers more discretion in how they implement new curricula, although it also poses challenges for their delivery;
- (b) outcome-oriented curricula may be compared according to the degree of granularity of the specified learning outcomes. Analysis suggests an association between the degree of granularity of learning outcomes and the degree of regulative purpose of the curriculum. A curriculum with a highly regulative purpose seeks to define learning outcomes which then regulate learning through assessment criteria. However, there appear to be other

factors at play. In some standards, learning outcomes are relatively holistic, but prescription of teaching and assessment is provided through the specification of knowledge, e.g. in France, or the specification of key competences, e.g. in the Netherlands;

- (c) a highly regulative outcome-oriented curriculum is sometimes associated with a relatively unregulated competitive VET market, e.g. in the UK (England). Rather than regulating the quality of providers or their entry into the VET market, the State uses the written curriculum to ensure the quality of VET provision by specifying which learning outcomes will be assessed. The manner of this quality assurance varies between countries; most countries will accredit both programmes and providers to some degree. Where VET provision is highly regulated and there is institutional ownership of VET standards, there is less of a need for the State to assess the quality of the service provided. In consequence, there is less need for a highly prescriptive curriculum;
- (d) some IVET curricula, particularly but not only those that are taught in VET schools to learners who have completed compulsory education, include requirements for generic skills or key competences that are not expressed in terms of subjects. These key competences may be integrated with other learning outcomes (e.g. German mechatronics) or they may be expressed as distinct learning outcomes situated in separate units (e.g. the Irish national traineeship) or distributed through many units (e.g. Hungarian tourist technician). Alternatively, generic skills may be systematically integrated across units, e.g. in the Netherlands. Some curricula aim to encourage the learning of generic skills through both academic and vocational subjects (e.g. the Slovenian gastronomy and tourism curriculum and the English engineering diploma). These arrangements will have implications for whether and how key competences and generic skills are taught and acquired.

CHAPTER 8.

The taught curriculum: pedagogies and learning environments

8.1. Introduction

This chapter focuses on how the written curriculum is delivered in teaching and learning activities in schools and training centres and in work-based learning. Findings are based on a case study approach in 14 countries and in 25 teaching and training institutions. The institutions selected are unlikely to be representative of all institutions teaching a particular programme, as they have different characteristics and serve different stakeholders. Accordingly, extreme caution must be exercised in generalising across case studies. Furthermore, the research into the design of outcome-oriented curricula is, in most cases, based on relatively new curricula, since these curricula are most up-to-date in terms of outcome-oriented approaches. Inevitably, new written curricula will be at an early stage of implementation, so it is likely that the taught curriculum is only now emerging and that current teaching and learning styles are in the process of adaptation, if they have adapted at all. In what follows, therefore, attention is often drawn to the manner in which the understanding and behaviour of teachers is or is not changing.

8.2. How does the written curriculum influence the taught curriculum?

8.2.1. Pedagogy in relation to highly granular written curricula

A common concern is that highly granular, regulative curricula encourage an instrumental approach to pedagogy where teachers and learners are concerned only with generating evidence of each outcome and lose sight of the competences which are supposed to be developed (Cort, 2010). Where learning outcomes are both highly granular and highly contextualised, this is likely to reduce the need for teachers and assessors to interpret the curriculum to teach and assess. Critics have represented this as a Taylorisation of teaching and assessment, which reduces discretion and, accordingly, reduces costs and increases management control and accountability (Felstead et al., 2011). However, just because learning outcomes are specified in a highly disaggregated

way, it does not follow that either teaching or assessment must be fragmented. Indeed, in the case of the Irish leavers' certificate and the Luxembourg mechatronics diploma, the high granularity of learning outcomes is combined with holistic assessment practices, i.e. the combined assessment of a multitude of diverse learning outcomes.

Where the high granularity of learning outcomes is accompanied by well-articulated assessment criteria (e.g. the English NVQ and the English level 3 certificate in travel services), then the assessment criteria influence the teaching and learning practice. In highly granular curricula, one learning outcome may be defined by seven or more assessment criteria. If assessment is continuous (e.g. as in the English NVQ and the Irish national traineeship) or if there are periods of extended assessment during the teaching process (e.g. as in the *baccalauréat professionnel des systèmes électroniques et numériques* in France), then the assessment criteria will be interpreted by teachers as instructions on what should be going on during learning. This is because there is no longer a clear distinction between teaching and assessment: 'In this process [continuous assessment], it is difficult to separate training from assessment' (interview with teacher, French case study).

Box 16 **Learning informed by competences in Spain**

In Spain, the higher technical tourist guide programme is relatively prescriptive and granular. One of the vocational schools visited has chosen to deliver one unit of the programme through a simulated travel agency that has been set up in the school. It is reported that, in designing the taught curriculum, teachers went back to the occupational standard (known as the professional profile) to understand in detail the work tasks and skills that tourism workers are expected to perform. The teachers found that the written curriculum failed to provide a sufficiently detailed or contextualised understanding of these competences, although it does set out learning outcomes. It was also reported that there are many other vocational teachers in Spain who continue to base their teaching on the content defined in the written curriculum (alongside the learning outcomes) rather than take more active approaches.

This suggests that the inclusion of learning outcomes in the written curriculum may not be sufficient to bring about the adoption of more active and authentic learning approaches. In Spain, it has proved helpful that teachers are guided by occupational standards as well as by qualification and educational standards – because an awareness of the competences behind the learning outcomes encourages them to use simulations and authentic work tasks as modes of teaching and learning.

Source: Spanish case study.

8.2.2. Pedagogy in relation to written curricula with minimal granularity

In curricula where learning outcomes are relatively holistic and the curriculum is not heavily loaded with detailed requirements in terms of knowledge, content or

other educational components, this implies greater discretion for teachers with respect to pedagogy. This is particularly the case if the design of assessment criteria, as well as the design of assessment methods, is delegated from national to school or local level.

In Germany, there are effectively two curricula (educational standards) for the mechatronics programme, one for the school-based and one for the enterprise-based component. Both curricula are relatively holistic and do not explicitly define extensive knowledge requirements (content) or detailed pedagogic approaches. On the school-based side, specialised vocational schools write their own training programmes (school curricula) in the light of a regional written curriculum, and they also design appropriate assessment methods. In the German case study, this local discretion was welcomed by some teachers but criticised by others. Some welcomed the freedom of interpretation they enjoyed: in one school, teachers commented that this flexibility made it possible to bring together electrical and mechanical engineering (a key ambition of mechatronics) because they could use their discretion to select appropriate content from two subjects rather than trying to cover six years' worth of content in a three year programme. However, other teachers expressed concern that the learning areas⁽³⁴⁾ were not sufficiently prescriptive – that it was difficult for vocational school teachers to know what content or learning outcomes to teach and assess and what content to leave out.

This finding suggests that teachers interpret the written curriculum in the light of their own established institutional practice. Where teachers are used to teaching content (rather than learning outcomes), they read an outcome-oriented curriculum with an implicit understanding of what content they expect to teach, and this prior understanding informs the way they interpret and implement the new curriculum. However, this same process may lead to frustration if teachers find it difficult to decide independently what content is needed to achieve the learning outcomes defined in the written curriculum. Not surprisingly, the way that teachers interpret written curricula will be affected by long-term professional habits which have been shaped by the character of curricula in the past⁽³⁵⁾ (see Section 8.3).

Norway's 2+2 model also provides considerable discretion for trainers. One interviewee at a company-run training centre in Norway commented on the national curriculum: 'You can read it any way you like' (Norwegian case study).

⁽³⁴⁾ The German curriculum organises learning outcomes into learning areas (*Lernfelder*) that combine theoretical, applied and general learning outcomes.

⁽³⁵⁾ For a critique on how some outcome-oriented approaches handle content, see Allais, 2012.

This freedom permits the training company to tailor the training programme very closely to the needs of its client companies and to local employers. Pedagogy is shaped by the productive and commercial realities of the working world of engineering. This might be described as a company-centred rather than a learner-centred approach. This approach implies that learning experiences are shaped by the logic of production and the market. It follows that the taught curriculum in this training environment reflects the characteristics of the industrial sector it serves, to a much greater degree than those taught curricula which are partly or entirely school-based. The holistic definition of the learning outcomes in Norway's mechatronics curriculum helps trainers to reconcile the need for the learner to gain a comprehensive set of learning outcomes with a project-driven mode of learning. The learning outcomes are formulated in a generalised manner which makes it possible for them to permeate learning that, in a working enterprise, must be divided by projects and specialised environments. Trainees contribute to larger complex projects, but they also have the chance to see projects through from beginning to end in the training workshop. Learning outcomes are articulated in a generalised way, which means that they can be kept at the back of trainers' minds and can be pervasive rather than allocated to particular projects.

Finland is another example in this category where the written curriculum has been recently revised to make its vocational qualification in the tourism industry more holistic. This has been done at a number of levels: the qualification addresses a broader range of occupations in the industry, modules are larger and there has been a reduction in the specification of knowledge requirements. At the same time, the responsibility for defining the assessment criteria has been taken away from schools. Assessment criteria are now defined at national level, and there is a greater focus on skills demonstration and the assessment of performance during enterprise-based learning rather than the assessment of knowledge. Given this change in practice and responsibility, some of the teachers interviewed expressed concerns that they had difficulty understanding the meaning of the assessment criteria which are published in the national qualification requirements documentation. The challenge in Finland was that, while the new assessment criteria were aligned with the outcome-oriented curriculum, some teachers found that this was not the case with their own teaching practice. This may be because their teaching practice places greater emphasis on academic content.

Box 17 Work-based pedagogy in Norway

Training at training company 'N' is project-based. Apprentices work on real commercial orders as well as practice projects. Instructors and apprentices do not have the learning outcomes at the forefront of their minds when working on individual projects; rather, they form a backdrop. As one instructor commented: 'We almost never talk about the training plan in a work context' but 'the training plan is always at the back of our minds'. This appears to be a consequence of the very general way in which the learning outcomes (or competence aims) are described: it would be hard not to acquire them through an apprenticeship.

What company 'N' and its sponsoring companies seek to do is to deliver the highest quality apprenticeship which delivers high-quality employees. This is achieved by selecting the most able students and providing them with the latest technology on which to practice in real work situations so they can develop technical competences to a breadth and depth beyond those required to pass the trade certificate examination. The workshop manager commented that quality and discipline increased when the workshop started operating commercially in early 2010.

The approach used is to provide experiential learning in as realistic a setting as possible. Most apprentices divide their time equally between a training workshop (called the production hall) and productive work in the companies, e.g. the computer numerical control (CNC) course, an apprentice's cycle of four weeks in the training workshop and four weeks in a company. However, the training workshop produces engineering solutions on a commercial basis, and so there is no strict division between learning and being productive. The workshop manager is responsible for commercial outputs, and ISO 9001 has been implemented in the production line. The training workshop is designed to give apprentices opportunities to see projects through from beginning to end – many interviewees remarked that, when apprentices are working in their sponsoring companies, they work on only a small part of a project, since the companies are large; their training workshop is more likely to be in a small company where they have to perform many tasks. There was little evidence of specifically designed pedagogical materials. Apprentices work from the same manuals as those used by employees.

Source: Norwegian case study.

Evidence from this research suggests that teachers were able to make sense of the new assessment criteria when they discussed the text with one another and with employers. Teachers reported that: 'The documentation needs to be read with employers – words need to be "opened" in a work context' (Finnish case study). This finding reminds us that teachers have to interpret and make sense of curricula and that they may need to go back to employers and the workplace to understand the emphasis on competence in the workplace as opposed to meeting traditional educational and training standards.

8.3. Which other factors influence teaching practice?

The analysis on the granularity of learning outcomes suggests that it is the type and balance of learning outcomes that are significant for the choice of pedagogy – rather than the fact that the curriculum includes learning outcomes. It is misleading, however, to suppose that the pedagogy is devised primarily as a response to learning outcomes or, indeed, in response to any curriculum. Accordingly, we should not assume that the taught curriculum is driven in a simple and immediate fashion by the written curriculum – even if it is an outcome-oriented curriculum. As will be seen in this and the following sections, there are many other factors that influence the behaviour of teachers, school managers and learners apart from the written curriculum; these include the professional experience of the teacher, the way the learning environment is set up, the characteristics and needs of the learners, the available (financial) resources and infrastructure, the institutional particularities, the teacher's degree of autonomy and the teacher's habits and values (Anneli, 1998; Barrow et al., 2007; Megahed et al., 2012; Psifidou, 2008; Psifidou, 2011a). For the most part, new curricula intervene in well-established practices. Teachers may make changes to their practice, but they are also able to re-interpret curricula so that they fit with their objectives and are realistic within the constraints under which they operate. Persuading teachers to make changes to their pedagogy is a form of learning in itself: there are emotional, political, cognitive and personal dimensions (Vähäsantanen and Eteläpelto, 2009). This is why it is said that pedagogical change often requires 'getting teachers to unlearn in order to learn' (Psifidou, 2011b).

In a few countries, some interviewees claimed that older teachers found it challenging to change their habits after many years of teaching. In particular, this might make it difficult for teachers to adopt more learner-centred approaches or to work more collaboratively with their colleagues. This is reflected in comments made by a Slovenian head teacher: '...we will work on this reform; there will be younger and better teachers, because those who have been in education system for 20 years and are used to one concept are more set in their ways, and it is harder for them to adjust to a new approach' (Slovenian case study).

Regardless of whether teachers and trainers were based in schools, training companies or enterprises, they usually had a strong understanding of how to train and were reluctant to introduce changes. A training manager in a large travel company pointed out that the company had acquired extensive training experience relating to many qualifications over a period of 30 years. The company was confident about its ability to deliver training. When asked whether the design of the curriculum has an impact on her approach to training or on the

approach of other members of her team, the manager replied: 'Not really, because it is the way we have been doing things in the company for years' (interview with training manager, UK (England)).

Some schools (for example one school in Ireland and another in Denmark) reported that they had a centre or council within the institution that was dedicated to the development of new pedagogical initiatives and the sharing of approaches and was able to provide tailored support. Teachers reported that such centres were valuable, although there was no evidence that these particular centres were attuned to support outcome-oriented or learner-centred approaches.

However, although, in practice, curricula may have only a marginal influence on the practice of teachers, this does not mean that teachers do not perceive curricula, even outcome-oriented curricula, as having a constraining effect.

One teacher, working with a relatively granular set of learning outcomes, said:

'From my own experience – because the learning outcomes are prescribed – you feel there is a path to take. It does not give you free rein, you are constrained. You feel that is the way to go (...) certain styles of learning will lead to certain outcomes' (Irish case study).

Box 18 Turning learning outcomes into teaching in Denmark

At a number of technical colleges in Jutland, Denmark, teachers and school leaders have implemented a project aimed at developing the competences of the teachers to turn learning outcomes into teaching on the foundation and main course for hotel and catering. The project work involved discussion of the learning outcomes defined by the trade committee and subsequently transforming them into actual teaching.

This process was described by the teachers as not only 'rewarding' but also difficult, as the learning outcomes were formulated at an abstract level and were, at times, confusing in their use of concepts and their taxonomy. The teachers felt that they had developed a common understanding of the trade which went beyond their own subject focus. However, they also discovered that not all learning can be described. This leads to the risk that teaching will become more instrumental – teachers will teach to formal outcomes, as these are measurable, even though they do not represent the competences intended.

Source: Sørensen and Størner, 2009.

It should not be assumed that it is straightforward for teachers to interpret what is required by learning outcomes. The message may be complicated by the fact that teachers may be expected to synthesise messages from a variety of national and local curriculum documents and guidance material. Some teachers believed that there was insufficient emphasis placed on competence in the learning outcomes. In Finland, teachers interviewed complained that the

language used to express the learning outcomes was too administrative rather than being relevant to the language of industry.

It was common for interviewees to report that the adoption of learner-centred approaches was hindered by teaching habits of frontal lecturing or by a preference for transmitting content. In many countries, outcome-oriented curricula are heavily loaded with content. Some teachers and head teachers experienced a tension between what they understood to be the innovative pedagogy implied by an outcome-oriented curriculum and the responsibility to do justice to extensive lists of content; this is the case, for example, in Ireland. Teachers expressed frustration at simply not being able to cover the identified content in the time available, or they reported that they made use of lectures to get through the extensive content, even though they knew that the students much preferred active learning.

This is reflected in comments made by a teacher in Finland about the national qualification requirements relating to mechatronics that are considered to be over-specified and too wide-ranging: 'It's like a fairy tale. It would take five years to do the automation course' (Finnish case study).

8.4. Outcome-oriented curricula and learner-centred pedagogies

This research was concerned with discovering whether learner-centred pedagogies were associated with outcome-oriented approaches and what factors might encourage the adoption of such pedagogies. The research discovered that a variety of pedagogies, usually described as learner-centred, were being used in the delivery of outcome-oriented vocational programmes. However, these pedagogies are not representative of a coherent approach. In the first place, the literature on learner-centred approaches gives diverse accounts of pedagogies, often using different terminology, such as 'active learning', 'student-centred learning' and 'open learning' (QCA, 2008; Cedefop, 2010a). Furthermore, there is not a single approach but a variety of alternative pedagogies, such as enquiry-based and community-based learning (OECD, 2010). The way that learner-centred learning is understood is not consistent across the case studies (with the partial exception of Denmark), and some but not all of the activities associated with the learner-centred approach are practised in different schools.

For the purposes of this research, learner-centred pedagogies are understood as a range of teaching and learning approaches which may be associated in practice and which may share some theoretical or pragmatic assumptions and values. These practices include, *inter alia*, experiential learning,

reflective learning, project learning, open learning, dialogic learning, group learning, practical learning and active learning. They may be defined in contrast to 'teacher-centred' or 'traditional' approaches characterised as teaching that departs from the traditional model of whole-class teaching where the pace and focus of learning is directly controlled by the teacher and the dominant activity is for the teacher to talk while the students listen and/or write. Learner-centred pedagogies are often characterised as innovative pedagogies.

In a number of countries, for example, Germany, Slovenia and the UK (England), it was reported that active and learner-centred learning methods were being promoted and were favoured by national VET agencies and by vocational teachers and head teachers. However, support for this kind of pedagogy was not particularly attributed to the introduction of outcome-oriented curricula. In some other countries, these pedagogies are associated with new curricula because they are explicitly recommended, e.g. in Romania, or they are promoted through professional development, e.g. in Croatia.

The teaching and learning methods used in the vocational schools visited included, apart from lecturing, problem-solving, skills demonstration, learning by doing, project work, group work, IT work, simulations, role plays and practical assignments. Most of them were familiar and habitual to the teachers and trainers interviewed; they were understood in terms of conventional practice in the workplace (e.g. teamwork in a business) rather than as being learner-centred or resting on any other educational justification. Project work was associated with experiential learning that consists of learning through the performance of tasks, and it was also associated with assessment, which sometimes took the form of a work-related assignment. Project work sometimes provided opportunities for students to make choices about the problems they were going to try to solve or the services or products that they were going to supply.

These and other learner-centred pedagogies have been adopted by most but not all of the teachers interviewed. They were found to be attractive to teachers, as much because they are often innovative (and, perhaps, fashionable) and appear to be effective and popular as because they are supported by theory and research.

In Denmark, one of the schools investigated did exhibit a well-developed and coherent learner-centred approach to delivering the *Industri teknikeruddannelsen* programme: the open-learning method. This approach, which placed the individual learner at the centre of his/her learning process, had been in place for seven years. Open learning was reported to be consistent with the desire to allow teachers pedagogical freedom and to give students and other stakeholders greater influence over the taught curriculum. Open learning implied that 'students

may develop their competences [at] their own speed of learning and in accordance with their own personal learning styles'. It also involves cultural change: 'humour and permission to laugh in learning situations are important factors in engaging students' (interview with teachers, Danish case study). This approach was regarded as very successful in this particular school.

However, the second school that was visited in Denmark organised the teaching and learning of the *Industri teknikeruddannelsen* programme on the basis of a whole-class method rather than in an individualised manner. This approach was preferred because it was reported to sharpen the focus on the learning outcomes for teaching and assessment purposes. Furthermore, it was held to be time-efficient and to strengthen the relationship between students and a particular teacher. In Denmark, where there is a well-articulated learner-centred concept of pedagogy, some schools see this as working well with an outcome-oriented curriculum, while others do not.

In the Finnish case study, it was reported that the learning outcomes in the mechatronics curriculum had been effectively designed to reflect working life and that this had brought about a change in teaching methods. In particular, there was an increased focus on practical learning – both in school and during enterprise-based training. In this case, the change in curriculum has been supported by a change in assessment: 90% of the marks in the final certificate are awarded on the basis of skills demonstrations.

There was evidence that teachers adapted pedagogies in the light of learner responses. For example, in the UK (England), a school and a university are collaborating to deliver the advanced diploma in engineering. However, one unit has proved to be challenging for students who felt unsupported by a pedagogy that was traditional, lecture-based and theoretical. Typically, the university teaching style consists of the teacher making a PowerPoint presentation which is followed by independent learning. In the future, this unit will be taught by the school not the university (English case study on engineering diploma).

Vocational and mixed schools in several countries reported that conventional timetables were suspended for project days or project weeks so that students could work together on more extended problem-oriented tasks and achieve a result and gain feedback over a shorter period of time. In some cases, these periods of suspended timetable made it possible for a variety of learning outcomes from different subjects to be identified and achieved, e.g. in Slovenia. However, it was also reported that many schools lacked confidence in or enthusiasm for this approach, and that they preferred to keep subjects separate and stick with a conventional timetable, e.g. in France.

During this research, it has not been possible to carry out any kind of objective analysis of the relative importance of different methods in different schools, countries or subjects. However, it was possible to interview learners in the different institutions visited and find out how they perceive and value the way that outcome-oriented curricula are taught to them.

Students studying the advanced diploma in engineering at a school in the UK (England) commented on the freedom that they have to decide what will be the focus of their projects. Although the curriculum is structured and teachers and students say that they are guided by the assessment criteria, the project approach means that students may choose their own means of demonstrating their skills and knowledge and providing the evidence required. This kind of personalisation is popular with students. Personalisation has been highlighted by the OECD as part of the agenda for making learning environments 'truly effective': 'activities that can be characterised as "profoundly personalised", that is 'acutely sensitive to individual and group differences in background' (OECD, 2010).

Learners in most countries were particularly enthusiastic about learning which they experienced as closely connected to work, such as learning from 'authentic' tasks. Realistic learning activities included work simulation, having contact with real clients or real workers and with enterprises, and contributing to commercial projects. Danish students talked enthusiastically about one project where they produced a barbeque (which they subsequently took home) and about another, group-based project in which they constructed a gear box, managing their own work and recording the process.

Work-based learners valued learning in the workplace and the opportunity to carry out real tasks, to produce items which were valued by real employers or by their customers and to be paid. Learners often reported that they wanted more opportunities for work experience.

In most countries, project work was popular. However, some students in several countries, for example Denmark and Germany, commented that project work became ineffective if it was not well supervised and supported by teachers. Danish students criticised 'the teacher who explains something once, leaving it for the learner to put the instructions into practice' (Danish case study). Students had particular concerns when they believed that they were not being sufficiently supported in projects that formed part of their summative assessment. Furthermore, some students commented that traditional lectures were more effective for basic subjects in the early stages of courses.

Learners in a number of case studies, such as in Hungary and the UK (England), valued their programmes because they could understand how their

curriculum could support progress into higher education as well as work. Where programmes were taught in collaboration with higher education, as in the case study on the advanced engineering diploma in the UK (England), this was valued by students because of the way that it supported their progression. Teachers reported that programmes which included general learning outcomes, such as mathematics, had helped students who were disaffected by conventional school education to see the relevance of key competences and to develop these competences, e.g. in Denmark and the UK (England).

However, some students were critical of parts of their outcome-oriented curricula and of the way they were taught. For example, students in both Denmark (industrial engineering) and Ireland (professional cooking) found the theoretical learning outcomes challenging and unattractive. Students in Denmark, for example, were less interested in academic subjects, such as physics, chemistry and cultural studies, which they could not link directly to their work. In Slovenia, students believed that they lacked practical skills in mechatronics or that had insufficient work experience. They were concerned that this would disadvantage them in the employment market. According to some teachers, these theoretical learning outcomes do constitute a barrier for those learners who do not have sufficiently high levels of key competences, for example literacy and mathematics. On the contrary, where students planned to progress to higher education, they particularly valued general subject learning and generic skills, for example mathematics and English language skills.

Finally, some students and teachers were very aware of the status of their particular institution, e.g. in Hungary and Norway. Even where outcome-oriented curricula are well established and effectively taught, it appears that the quality and reputation of particular institutions can be very important in giving credibility to qualifications and opening doors to employment and further education.

8.5. Developing the practice of teachers and trainers

In some of the case studies, there is evidence that national curriculum agencies or teaching professional development agencies are developing guidance for teachers (and training programmes) that bring together innovative pedagogies. Professional development of teachers was frequently mentioned as a key factor in relation to the introduction of learner-centred pedagogies.

In France, the inspectors and teachers involved in developing local regional training programmes distribute teaching and learning resources designed to support the teaching and, in particular, the assessment of the *baccalauréat*

professionnel des systèmes électroniques et numériques through a website ⁽³⁶⁾. The website includes information about equipment, timetables and enterprise-based training as well as an online forum. In addition, there are regular seminars where those involved in teaching vocational baccalaureates come together with other teachers in their sector (including those teaching CAPs, BEPs and BTSs ⁽³⁷⁾) to exchange ideas, share resources and update their practice.

National development agencies sometimes use training as part of a broader strategy of encouragement and guidance to develop pedagogy. The Croatian National Agency for VET and Adult Education (ASOO) is publishing a book about pedagogy which is intended to support active learning. In Slovakia, it was reported that the national VET institute was pushing schools to make greater use of project-based teaching, which was expected to encourage greater collaboration between school- and enterprise-based learning. A national professional development agency, the Learning and Skills Improvement Service (LSIS), was commissioned to provide training for teachers of the new advanced diploma for engineering in the UK (England). This training aimed to equip teachers with a portfolio of innovative pedagogies (Stanley, 2012).

It was reported that there are national cross-curricula initiatives (or at least advice, as in France) to encourage innovative teaching and learning. In Slovenia, for example, there is a national initiative, known as 'project weeks' when the conventional timetable is suspended for two separate weeks each year and teachers are encouraged to collaborate to design a whole-school, cross-curricula topic. The students work together in groups, researching and executing a task in accordance with a brief, and concluding with a presentation. Suspension of the timetable makes it easier to organise learning out of school, for example through visits to enterprises.

In Denmark, it is recognised that learning outcomes may be interpreted differently, and, accordingly, there is a need for dialogue with teachers. In consequence, the tripartite Metal Industry Education Committee (*Metalindustriens uddannelsesudvalg*) holds conferences and runs workshops to explore what the outcomes mean and how they may be taught and learned (Danish case study).

⁽³⁶⁾ See <http://www.cerpet.adc.education.fr/ressources/583/index.html> [accessed 15.10.2012].

⁽³⁷⁾ CAP, *certificat d'aptitude professionnelle* (level EQF3); BEP, *brevet d'étude professionnelle*, BTS; *brevet de technicien supérieur* (level EQF5).

Box 19 Professional development in Germany

In Germany, dedicated professional development of teachers has been provided since 1997 with the aim of helping teachers to develop action-based approaches to vocational learning. Teacher trainers have been sent to vocational schools across Germany. It is reported that the impact of this professional development is 'mixed' and that the programme is still ongoing. Furthermore, the development of new teaching orientations, as explicitly required by the written curriculum, is more time-consuming than expected. Teachers reported that participation in this training was voluntary and that they might have to meet the costs personally. In addition, some reported that they were too busy to attend. From 2012, a series of implementation conferences are planned which will involve school supervisory boards as well as teachers.

Source: German case study.

In Croatia, where outcome-oriented curricula are currently being prepared, there is strong evidence that access to training is critical in enabling teachers to understand the new curriculum and adopt a positive attitude towards it. Only the school that had received training demonstrated widespread awareness of the new curricula. Croatia's school leaders reported that lack of funds was a barrier: teachers are expected to pay for their own training sessions.

In Slovakia, the European Social Fund (ESF) has financed a national project which aims to train teachers to design educational programmes at school level, including the development of key competences. During the first phase of this training, 87 teachers have been trained to act as school coordinators for curriculum writing.

It was common to find that professional development was distributed very unevenly. Schools that were piloting new curricula had received extensive training support. For example, at an innovative school in Slovenia, teachers attended a training workshop every second month over a period of two years prior to implementation and another two to three workshops annually during implementation. A second school received training for only one year before implementation. Late adopters received less training, if any at all. Schools that received additional training to support the implementation of new curricula pointed out that teacher turnover meant that they needed top-ups of training – which were not always available.

8.6. Using formative assessment to drive learner-centredness

Assessment of learning outcomes is defined as 'The process of appraising knowledge, know-how, skills and/or competences of an individual against predefined criteria (learning expectations, measurement of learning outcomes). Assessment is typically followed by validation and certification' (Cedefop, 2008c). Assessment fulfils different functions and has different purposes and uses. The distinction is made between assessment carried out for summative and formative purposes (Eurydice, 2009). As defined by Cedefop (2009e), assessment carried out for summative purposes is 'The process of assessing (or valuing) a learner's achievement of specific knowledge, skills and/or competences at a particular time'. The Eurydice report refers to it as 'assessment of learning' and points to the use of the results 'to award a certificate or to take important decisions'. Assessment carried out for formative uses is 'a two-way reflective process between a teacher/assessor and learner to promote learning' (Eurydice, 2009). The main purpose of 'assessment for learning' is to assist the learning process of individuals by identifying specific learning needs and adapt teaching accordingly and to shape improvements in learning and teaching.

In this research, only assessment that is used for entirely formative purposes to support learning is considered. Summative assessment, such as module tests, which might be considered to have a 'formative' as well as a 'summative' effect, has not been investigated.

Students were given feedback by teachers and trainers on their performance and progress in all of the outcome-oriented curricula analysed. This was usually described as continuous but informal, for example in the case studies in Ireland, Poland, Slovakia and Spain. Feedback in these countries was not structured by formal documentation, nor was it formally associated with identified learning outcomes. For example, students in Denmark reported that they were given feedback on tests but that it did not come in the form of learning outcomes.

In general, it was unclear whether the implementation of outcome-oriented curricula was affecting the character or frequency of this kind of feedback. Formative assessment was variable within countries. It was quite common for learners in one school to report regular and constructive feedback while learners in another claimed that they did not receive such feedback. In the Croatian case study, it was reported that the introduction of outcome-oriented curricula had had no impact on formative assessment. In the Polish case study, it was reported that more project-based learning was leading to more individually tailored feedback.

In countries where learning outcomes are relatively holistic, there were a number of cases where there were relatively formal arrangements for regular,

formative assessment, e.g. in Germany and Norway. In Germany, a diary system was used to monitor learning in the workplace, but it was not structured in terms of learning outcomes.

Where learning outcomes were relatively granular, there were sometimes formal, tracker-type systems, e.g. in the English NVQ and the Irish professional cookery traineeship. In some cases, trackers required regular inputs from learners, teachers and work-based trainers and were used as a tool to track achievement across all learning environments. However, in practice, these trackers captured progress in terms of content covered, instead of learning outcomes.

There was some evidence that IT platforms are being used to support formative assessment. For example, in the German case study, teachers, trainers and students were reported to be using an e-learning platform (moodle) where students could generate a portfolio, receive feedback, ask questions and take assessments. In Denmark, an online tool, the Elevplan, is used to plan and monitor learning. This includes vocational learning outcomes as well as general and social learning outcomes (key competences). According to interviewees, it helps both teachers and students to plan and document learning and to develop a shared understanding of progress. However, Elevplan is populated by the nationally determined learning outcomes. In consequence, this means that there is limited scope to develop locally defined learning outcomes, to modify learning outcomes over time and to adapt learning outcomes to suit the needs of particular students. In practice, however, it seems that students do not make extensive use of it: 'Many students do not use the tracker, known as Elevplan, and some use it only to a limited degree' (interview with teachers). When asked, students confirmed that they used Elevplan only to check their test results (Danish case study).

8.7. Making textbooks and other learning materials accessible and usable

The use of innovative and more learner-centred teaching and learning approaches in initial VET creates additional and new demands for textbooks and other learning materials and resources. These are instructional devices that mediate policy intentions and curricular implementation, often understood as being situated between the intended and implemented curriculum (Valverde, 2002).

Box 20 Formative assessment in enterprise-based training in Norway

It is students' responsibility to self-assess their progress against the competence aims, supported by their instructors. On the computer numerical control (CNC) course (four weeks in the training workshop, four weeks in a company), students are briefed when they return from the factory about their next task and the learning benefits. At the end of their four weeks in the training workshop, they may spend 15 to 30 minutes evaluating themselves against the competence aims, but this does not always happen, as the project may not be completed, and someone else may complete the job (this is most typical when commercial orders are involved). One apprentice commented that discussion with instructors is very important for assessing progress prior to their filling in their portfolio. In addition, every six months, there is a more formal meeting between the apprentice, their instructor and their company supervisor and mentor to check on progress. Feedback is valued by apprentices, as it gives them a perspective of their overall progress: 'Instructors were really good at telling me which areas I needed to work on' (interview with a trainee).

From the instructors' perspective, they see their job as being to help the apprentices to be 'self-conscious in their choices'. They have a facilitative role in providing personalised, ongoing feedback through two-way conversations. They talk to apprentices 'on a human level to see if there is any help they need'. 'N' company has expectations of the apprentices, and these are explained orally and informally. The small number of apprentices means that the instructors are able to get to know them well. There is attention to the social dynamics of learning as well as to skills and knowledge; instructors take a strict approach to best working practices and discipline, since the working practices that apprentices experience in their companies may not be exemplary and may teach them bad habits.

Instructors may review apprentices' portfolios to see if they have completed their tasks well enough. Critically, however, they may review their outputs against industrial criteria: it is clear when an apprentice is reaching the desired standard or not, since products are sold to customers and no allowance is made for their being trainees.

A web-based tool has been designed to enable apprentices to monitor their progress against the competence aims. A learning outcomes approach makes this possible.

Source: Norwegian case study.

It became evident that, where VET programmes were well resourced and have been running for some time, e.g. in Germany, new and updated school books had been produced which did support the outcome-oriented curricula. In some other schools visited, teachers and students were using established textbooks which had not been specially designed in relation to new written curricula. Some teachers were able to make use of these textbooks to support the new curriculum. In other schools, it was reported by teachers that the existing textbooks were not appropriate for supporting outcome-oriented curricula and that teachers needed to design their own material (e.g. in the Czech Republic and Ireland). In these schools, teachers used resources drawn mainly from the

Internet ⁽³⁸⁾. While some teachers questioned whether they had the time and skills to produce these resources independently, others (e.g. in Ireland) found this fact rather positive, as they were given the opportunity to create material that fitted the curriculum and made it more engaging for their students.

In other cases, it is the practice that teachers do not use existing textbooks but create their own material and make use of authentic materials. This is the case in the curriculum for the Spanish higher technical tourist guide programme. In Slovenia, there are no textbooks for the technical part of the gastronomy and tourism programme, so teachers create their own teaching and learning resources by photocopying articles and chapters from books and also drawing on material found on the Internet. In Croatia (tourism and hospitality), it is expected that there will not be standard textbooks to support the new curricula. It is planned that teachers will be provided with a list of references that they are advised to use, but it will fall to teachers to produce their own teaching and learning materials. In Ireland, it is also expected that teachers produce the teaching and learning materials that cater to the needs of trainees and the particular local curriculum provided. Textbooks were also not used in the work-based training case studies on mechatronics in Norway and travel services in the UK (England). Learners were expected to learn from authentic materials and manuals and from their supervisors and fellow workers.

It is difficult to judge whether the absence of textbooks to support outcome-oriented curricula is a temporary or permanent phenomenon, and whether it is rather positive or negative in terms of delivering the written curriculum successfully. In general, in the curricula examined in the mechatronics sector, teachers were more likely to report that existing textbooks were out of date, usually because of rapid developments in technology, than in the case of tourism. Furthermore, it is not clear whether the absence is simply a result of curriculum change or whether outcome-oriented curricula are less well-suited to textbook-based learning.

It was a common concern among interviewees that it takes too long to produce new textbooks. In Slovakia, the Ministry of Education is exploring the possibility of translating Czech textbooks into Slovakian; however, teachers expressed the concern that even updated textbooks would become out of date quickly as a result of ongoing technological change. Accordingly, the expectation was that it would fall to teachers to generate up-to-date materials and that the teacher would need to work with employers to keep pace with change.

⁽³⁸⁾ The increasing use of the Internet as a support for teaching and learning appears to be weakening the dominance of textbooks, but this is not particularly associated with outcome-oriented curricula.

To this end, some good examples were found of collaboration to produce teaching and learning materials that were appropriate for outcome-oriented curricula. In France, a professional network had been formed which had led to the exchange of resources to support teaching and learning. In Poland, support was available to those schools using the outcome-oriented mechatronics curriculum through a special network. This network provided both teaching and learning resources and training where required. The new learning materials were written by 'professionals and experts' and were perceived to be more closely associated with the world of work than traditional textbooks. In the UK (England), stakeholders requested that the advanced engineering diploma include applied mathematics for engineers. Currently, there are no suitable textbooks to support this part of the curriculum. However, the school mathematics department visited is collaborating with the national Royal Academy of Engineering (the professional organisation for engineers in the United Kingdom) and a partner university to develop tasks and exemplars for students. The novelty and high profile of this new curriculum in the UK (England) has motivated teachers to write new resources and created a culture where partners give their time and expertise to support this work.

8.8. Creating effective learning environments

The quality and character of the learning environment is critical in terms of supporting learner-centred pedagogies and delivering the written curriculum successfully (OECD, 2009). VET curricula may be delivered in a number of distinct learning environments, for example through full-time vocational school, through alternance and through work-based learning. Within each learning environment, learning may subsequently be conceptualised in terms of different learning spaces. Depending on what kind of physical space is used and which teacher is teaching, learning may be judged to be either theoretical or practical. In some schools, key competences, such as communications and IT, are also taught by specialised teachers in specialised learning environments.

European VET policy documents and international authors emphasise the need to shift away from traditional teaching classrooms and support learning in different learning environments, including the workplace with a view to promoting learner-centredness in VET (see Smith and Blake, 2006). However, the design and use of learning environments are frequently dependent on timetables and room availability. Teachers and head teachers are often concerned about the availability and quality of physical spaces for practical learning (e.g. workshops, laboratories). Demand for well-equipped practical learning areas is, in most

cases, in excess of supply. Accordingly, intended learning outcomes as conceptualised and described in VET provision (e.g. written curricula and standards) may frequently need to be revised so as to fit in with these fundamental realities. Indeed, the findings from interviews with teachers, learners and employers point to challenges for ensuring effective learning environments to support the new outcome-oriented curricula for school-based and enterprise-based learning as described in the following two sections.

8.8.1. Learning environments for school-based learning

Concerns were expressed by interviewees in some of the countries visited that, when the curriculum examined was delivered at school, appropriate learning environments were not available. This meant uncertainty about how learning outcomes could be delivered or frustration on the part of students that pedagogy was dominated by lecturing rather than practical learning. Concerns were expressed by interviewees in a number of countries that workshops and computer laboratories were not available.

In the UK (England), it was recognised that general upper-secondary schools would not usually have the workshops or equipment required to deliver the learning outcomes set out in the engineering diplomas. In consequence, providers have been required to join together in consortia to gain permission to teach these programmes. Consortia have to prove that they have the resources necessary and that substantial capital grants have been made to enable schools to invest in spaces and tools. Consortia were also able to bid for capital grants to develop the infrastructure for delivery of the new engineering programmes. In Sheffield, for example, the local consortium was granted £500 000 to build and equip an engineering centre which was shared by all those schools in the city that were teaching the new engineering programmes. The engineering centre was located on industrial premises next to a well-known local engineering employer. The location of the centre makes it easier to engage industry in teaching.

Most vocational schools visited are making increasing use of IT; however, it is not known what kind of impact this is having on pedagogy and learning outcomes. Conventional lecturing is being enriched by the use of PowerPoint. There are some cases of students and teachers making use of dedicated online resources to support their vocational teaching and learning, e.g. in Germany, Ireland and the UK (England). Only in the German case study, students were using a learning platform to support self-directed learning and formative assessment. Students expressed some concerns about lack of access to suitable IT facilities. For example, Danish students complained of distractions when sharing an IT room with another group. Although e-learning was not a major

focus of this research, findings suggest that there is considerable potential for further use of IT to support active learning and other learner-centred pedagogies.

The social environment of learning is also important, although this is not always obvious. For example, in the UK (England), it has been challenging for teachers and students to achieve the learning outcomes set for mathematics in the advanced diploma in engineering. This is a significant issue because the mathematical element of the diploma was boosted during the design stage by stakeholders, particularly by universities, who argued that advanced mathematical skills were essential competences for engineers. Initially, advanced diploma students were taught mathematics separately; however, in response to the difficulties they encountered, they are now taught together with a group of students studying mathematics at A-level (an academic programme). This has been found to work well: 'The A-level students set an example, set the pace and encouraged the advanced diploma students' (interview with teacher, English case study on diploma).

Some teachers reported that they tried to plan theoretical and practical lessons so that they took place sufficiently close in time to allow students to make connections, particularly when units or even individual learning outcomes included both practical and theoretical dimensions. Flexible learning spaces make it easier to make connections between theory and practice in teaching and learning. This was not always possible because of timetable constraints or lack of suitable rooms. Examples of learning environments that made it possible for theoretical, practical and key competence learning to go on together were found in Germany, Norway, Romania, Spain and the UK (England) (see Box 21).

In addition to schools and workplaces, VET programmes are sometimes being taught in hybrid learning environments. In Slovakia, for example, there are centres of practical education that are distinct from the rest of the school. These centres engage in business activities, and learners can earn money for their work.

Box 21 **Training firms in Romania**

In Romania, a new initiative in the teaching of services such as tourism, catering and commerce is known as the training firm. This was introduced as part of a VET modernisation process to encourage entrepreneurship among young people. The training firm draws on those units from the curriculum for the technician in tourism qualification most relevant to enterprise, marketing, business planning and human resources. The introduction of the training firm required a different pedagogy, and teachers received professional training to develop skills for using learner-centred approaches.

In the case study, school sessions for the training firm were organised in a non-traditional classroom setting: the room where the school board usually meets. This physical space places teaching and learning in a recognisable 'business' environment, which is associated with powerful decision-making and outside stakeholders.

Students are formed into companies for the purposes of learning and are expected to stay in role. The teacher's role is to promote learning, which typically takes the form of group work, discussion and presentation.

The learning programme targets a blend of vocational learning outcomes and generic skills such as communication and IT skills.

Source: Romanian case study.

8.8.2. Learning environments for enterprise-based learning

Outcome-oriented curricula may specify that some portion of a vocational programme should be delivered through work-based learning. This may be a formal requirement of the qualification standard or it may be set out in the education standard ⁽³⁹⁾. In countries, such as France, the Netherlands and Sweden, where there is a single qualification standard that applies to all programmes in a particular domain, there is a formal requirement for some work-based learning in every mode. This suggests that, in these cases, it is not possible to achieve vocational learning outcomes without some contribution from work-based learning. Evidently, there are some learning outcomes which, in principle, might be acquired either in a vocational school or in the workplace or through a combination of the two. In particular, learning outcomes associated with coping with the realities of working conditions or dealing with real clients require practice in a real working environment.

⁽³⁹⁾ For example, in Slovakia, in four-year programmes, work-based learning is prescribed at 1 400 hours per annum or 570 hours if the learner does not have apprenticeship status. In France, 22 weeks of work-based training over three years is a general requirement for IVET. In Slovenia, the national curriculum requires 3 112 hours of theory-based learning, 598 hours of practical learning in schools and 266 hours of training in enterprises.

Furthermore, in most vocational curricula, work placements do not serve only to address particular learning outcomes. They also serve to combine several learning outcomes, for example generic and technical skills or theoretical knowledge and practical skills. As the following example from Norway shows (see Box 22), enterprise-based learning helps learners to apply what they have learnt so as to develop autonomy and responsibility.

Box 22 Enterprise-based pedagogy in Norway

In Norway's 2+2 system, a holistic national curriculum regulates all four years, but provision for the first two years falls to upper-secondary schools, while provision for the second two years falls to local agencies running apprenticeships. The trainers in the employer-run training company 'N' all have a background in production rather than teaching. The Norwegian curriculum is holistic and light on content. This allows the trainers to interpret the curriculum in terms of their own practice as working engineers and to devise a pedagogy which mirrors the conditions and ethos of working life. Apprentices work on live production tasks which are completed to professional standards and supplied to paying customers. Apprentices are expected to exhibit the attitudes and disciplines of adult workers. They are treated with respect and given access to expensive tools and high-status work. Learning is supported not by textbooks but by the standard equipment manuals. In this situation, the holistic national curriculum serves not to guide teaching and learning but only as a framework that recognises what the training company is doing. The curriculum devised by the trainers at training company 'N' closely reflects practice in the local companies that commission training company 'N' to provide training.

Source: Norwegian case study.

Students interviewed in almost all of the case studies valued work-based learning, though the level of support that they received from their workplaces varied enormously, particularly when the relationship between the vocational school and the employer was not strong. A few individual apprentices reported that they had virtually no time for learning (as opposed to working) and that their supervisors were never able to give them time to support their learning or mentor them. This, however, was reported only in a minority of cases.

In those countries where students had opportunities to gain experience through work and to work alongside qualified workers, students interviewed valued these opportunities highly: 'Even if it is not perfect, you learn more than in school because you get practical experience, something that employers appreciate the most' (Slovenian case study). Many students, for example those in the German case study, believed that they were developing social competences and transverse skills, such as teamwork, through their work-based learning. Where students had the opportunity to make connections between work-based and school-based learning, they were particularly pleased, for example in

Denmark and Ireland. Danish industrial engineering students valued school-based learning because it gave them the chance to explore new ideas and experiment with the machines, whereas in the workplace there were time constraints and pressure from the production process and from customers. At school, they could question processes, whereas at work these became routine. Some Irish students reported that their supervisors had created learning opportunities for them to apply the skills and knowledge that they had acquired in school in the workplace.

In some countries visited, VET programmes were taught entirely by enterprises, without any contribution from a vocational school; this is the case, for example, in the UK (England) for the curriculum examined in the tourism sector.

Box 23 Company-based training in travel services in the UK (England)

Company 'E1', a large travel services company based in the United Kingdom, recruits some 250 level 2 apprentices each year, and the majority progress to a level 3 apprenticeship. The apprentices are fully integrated in the life of the business with just five hours per week dedicated to study as opposed to work. Company 'E1' places a strong emphasis on learning by doing, in particular through interaction with clients, and on learning from experienced colleagues and mentors: 'There is no substitute for client interaction, the work in the store and learning from others' (interview with training manager, English case study, travel services).

On-the-job learning is supported by planning, e-learning, formal training sessions and reviewing. For the most part, key competences, such as mathematics, are developed on the job, with additional teaching when a need has been identified. Company 'E1' makes use of learning outcomes to identify the objectives of training sessions and to ensure that e-learning materials are correctly tailored.

Company 'E1' receives around 1 000 applications for just 250 apprenticeship opportunities every year. It is evident that the apprenticeship in travel services is well suited to an in-company delivery mode, which suggests that the learning outcomes correspond well to the competences required by this employer.

Source: English case study.

8.9. **Coordination of school-based and enterprise-based training**

8.9.1. Institutionalised collaboration

Strong relationships exist where there is continuous communication and collaboration, where teachers and work-based trainers may communicate about the curriculum and about students and work together to design new projects. In France, for example, the school and enterprise enter into a formal agreement in relation to the learning outcomes to be developed and assessed by each partner.

Students are supported by work-based tutors who meet regularly with school-based teachers to evaluate the learner's progress and organise the assessment that will take place in the enterprise.

Table 6 **Proposal for the organisation of enterprise-based learning in France**

Pathway and progress over three years		
10th grade, electricity	11th grade, vocational baccalaureate	12th grade, vocational baccalaureate
Ability to provide feedback and to report.	Acquisition of full autonomy.	Organisation and management of a project from beginning to end.
Six weeks of on-the-job training within the company (3+3).	Eight weeks of on-the-job training within the company (4+4).	Eight weeks of on-the-job training within the company (4+4).
The year split into four periods.	The year split into two periods.	The year split into three periods.

Source: French case study.

In France, there is a formal document, the *livret*, which sets out the learning outcomes that the enterprise will address. Students may select a particular specialisation within the *baccalauréat professionnel des systèmes électroniques et numériques* only if they are able to secure an appropriate work placement. The availability of specialised workplaces is referenced through regional plans which map the availability of funded training in relation to the employment needs of the French regions.

However, high levels of collaboration do not always lead to entirely satisfactory outcomes. Denmark is a country where there is a high level of collaboration between stakeholders from industry and education at national and school levels. Industrial representatives contribute extensively to the design of learning outcomes and to assessment processes. Both curriculum and assessment have been revised several times to meet the needs of stakeholders. However, students interviewed in the school visited reported that 'There is not much connection between the activities in the college and those in companies in which they are training, often because the tools and machines they use are different' (Danish case study).

The Finnish case study provides an example of curriculum reform which has led to an improvement of collaboration with a positive effect on pedagogy (see Box 24). The new tourism curriculum sets out learning outcomes which shift the focus onto skills and more contextualised knowledge. This focus is reflected in

the change in assessment methods: 90% of marks in the final certificate are awarded on the basis of skills demonstrations. The success in the skills demonstrations is dependent on the effectiveness of on-the-job training during enterprise-based training. It is reported that teachers were concerned at the prospect of skills demonstrations, as they questioned how they could work with companies. However, the challenge has been met through close collaboration between teachers and businesses. Each student has a plan drawn up for their work placement by the teacher, the employer and the student themselves. Teachers actively engage with businesses in these processes, in some cases helping companies to unpack their work processes. Some of these discussions require a significant investment of time. Teachers also teach the people responsible in companies how to carry out the assessment. Accordingly, another significant aspect of the national reforms is that, while companies are required to carry out the assessment, teachers moderate.

8.9.2. Minimal collaboration

There is minimal collaboration where the relationship between school and workplace learning is limited to the soliciting of companies for work placements and teachers making visits to students on work placement. The extent of cooperation depends on the current condition of the labour market. The case studies suggest that there was generally minimal collaboration in Croatia, Poland and Slovenia, although this varied between schools. For example, in one country where two schools were compared, one school enjoyed much better cooperation from local employers because that company was experiencing recruitment difficulties. Even where there is a formal agreement between a school and a business, that relationship will be weakened if, as in one case study, the business is not recruiting any workers.

Box 24 Strengthening collaboration with businesses through outcome-oriented curricula in tourism, Salpaus further education, Lahti, Finland

The curriculum reform process in Finland has provided the opportunity to improve interactions with local businesses. There is more on-the-job learning which occurs at the end of a module and is a key means of consolidating the learning that has taken place. Most assessment now takes place through skills demonstrations. Within the framework of the new national qualification requirements built around learning outcomes, local providers have responsibility for the content and structure of the curriculum.

Although Salpaus had introduced its tourism curriculum in 2000 and companies had been involved from the start, the new framework has provided new opportunities. It was decided to exceed the national minimum for on-the-job learning so that it comprises 48 weeks or more than 40 credits during a three-year course (in comparison to 20 credits before the reforms in 2009). The rationale is that tourism offers such a broad range of opportunities that require substantial time for students, and a single provider would find it difficult to provide all the necessary resources and infrastructure. Furthermore, opportunities are found for some students to carry out their work placements abroad, e.g. in Croatia and Spain. There is a particularly strong focus on on-the-job learning in students' final year as the prospect of employment draws near. There is also some scope within the national framework for local curriculum flexibility, and the 10 credits available for free choice have led to the development of a catering module to meet the needs of local businesses.

The extent and depth of interaction with local businesses has been significantly increased. Formerly, each education provider was required by law to have a professional skills demonstration board made up of a balance between education and business people, its purpose being to approve the provider's skills demonstration plan. Salpaus has, in addition, chosen to have another board for each sector which is consulted on curriculum content; this consists of 8 to 10 people, the majority of whom are from local businesses.

The benefits have been significant. The teaching team at Salpaus look at the whole working process, and almost the entire curriculum is now contextualised. The purpose and function of on-the-job learning are reported to be clearer. There have been multiple benefits for students. On-the-job learning is reported by student counsellors to be attractive to students, with little absenteeism during this part of the course. More than 70% of students find employment afterwards, and 15% of students go on to further education, the highest proportion on any programme in Salpaus.

Source: Finnish case study.

In a situation of minimal collaboration, it is unlikely that there is any expectation that identified learning outcomes will be achieved through work experience. Teachers are more likely to see work experience as complementary and supportive, but not as an environment which is the planned locus for the learning of some outcomes (see Box 25).

Box 25 Practical training in enterprises in Slovenia

At the end of every school year, students are expected to spend a specified number of hours undertaking practical training in enterprises. They usually find an employer by themselves. If they cannot find an employer, the school is responsible for providing them with one. In the enterprise, they identify a mentor who will guide the student through his/her training. Schools also prepare the programme for this training, but it is up to mentors to follow it. It can happen that the student is used only as cheap labour, but usually these enterprises are then excluded from the programme for the next school year. During the work-based training, the student keeps a training diary that is evaluated by a mentor and a teacher from the school.

There is no quality assurance mechanism for practical training in enterprises at national level. This year, the National Vocational Agency published instructions for practical training in enterprises (PTE) for schools, employers and students that are intended to make the process more transparent.

Each school also has a training manager who acts as a link between school and employers providing the training. In school 'A', the manager attends meetings with employers every second year to explain the programme of practical training and all the criteria that need to be met. In school 'B', it is quite hard for students to find enterprises for PTE; consequently, it is also harder to maintain and guarantee the quality of PTE. School 'A' finds that employers are competing to recruit trainees and are also more willing to cooperate in quality assurance.

Even if PTE does not meet all the expectations of students, it is the part of the programme that they like the most. This is reflected in comments made by a student:

'I would say it is up to the student how much he will learn during his PTE. You have to be curious and almost intrusive to prove to the employer that you are really interested in the work, and they will give you lots of different and new tasks to learn. But even if it is not a perfect training system, you learn more than in school because you get practical experience, something employers appreciate the most' (interview with student).

The PTE is complementary to the school-based programme, but it is not expected to achieve specified learning outcomes.

Source: Slovenian case study.

8.10. Key findings

The relationship between written and taught curricula may be summarised as follows:

- (a) the manner in which written curricula are structured and the way in which learning outcomes are formulated may have an impact on pedagogy in various ways. Some outcome-oriented curricula do actively promote various learner-centred pedagogies, while others give very little pedagogical guidance. For example, where learning outcomes are defined holistically, this appears to create a pedagogy that promotes the development of autonomy, vocational identity and applied knowledge. Another example

- would be where the organisation of learning outcomes into units in the qualification standard encourages a modular and collaborative approach to the design of the training standard, as for example in the Polish case study;
- (b) where qualification and curriculum standards are neutral in relation to pedagogy, this allows trainers to continue to use pedagogies that they are most comfortable with and that suit their institutions best. The case studies of enterprise-based training show that this can lead to on-the-job learning and a pedagogy that closely reflects the ethos, structure and dynamics of the enterprise concerned. In school-based modes, the research showed that a curriculum without pedagogical guidance could co-exist with a pedagogy that reflects the established practices of vocational schools, which were sometimes found to be traditional and teacher-centred. However, in most of the countries investigated, there are organisations that support pedagogical innovation in schools as a means of effectively implementing outcome-oriented curricula;
 - (c) learner-centred and active learning approaches are advocated by many of the teachers and trainers interviewed as well as learners involved with outcome-oriented curricula in initial VET. Students, in particular, welcome personalised, practical learning activities that are strongly work-related and make connections between skills and practice. Most of the vocational schools visited are making increasing use of IT, and conventional lecturing is being enriched by the use of PowerPoint. Many students are making use of the Internet and of online resources to support their vocational learning. Computer-based learning was not a major focus of this research, but there appears to be considerable potential for further use of IT to support innovative pedagogies and to supplement or replace textbooks;
 - (d) work-based learning is popular with students, particularly when it takes the form of work experience. Students believe that they acquire valuable competences from work experience and that it enhances their employability. Planning for the delivery of learning outcomes would be helped by good collaboration between schools and enterprises. The degree and manner of this collaboration vary, even when there is a shared commitment to outcome-oriented curriculum design and development;
 - (e) barriers to the more extensive use of learner-centred pedagogies include both institutional constraints – especially the relatively large number of students per class, lack of resources and time, content overloaded curriculum, unsuitable learning environments, inadequate methods of assessment and lack of opportunities for learners to gain work experience – as well as teachers' mentalities and resistance to change;

- (f) professional development for teachers is an effective tool to empower teachers to implement outcome-oriented curricula. Professional development work should be informed by change-management approaches which help practitioners to become aware not only of their current practice and the reasons for change but also of the wider affective, social and psychological dimensions of change. This is particularly important considering that the introduction of outcome-oriented curricula is just one of the changes that teachers and learners are expected to deal with.

CHAPTER 9.

Outcome-oriented curriculum and educational inclusion

9.1. Introduction

There are different understandings of inclusion and inclusiveness in relation to the written and taught curricula. One approach is to understand educational inclusion in terms of opportunities, barriers and access for particular individuals or groups of individuals. An alternative approach is to focus on the extent to which pedagogy is able to adapt the curriculum to the needs of individuals and groups. In this report, we see these two approaches as being closely connected. Therefore, for the purposes of this research, the term inclusiveness is understood to refer not only to pedagogy but also to the extent to which educational programmes are accessible to all those who might benefit from them. An educational or training programme will be inclusive if all aspects serve to enable participation from suitable learners: written and taught curricula, recruitment practices, assessment methods, entry qualifications, institutional availability, fees, etc. An inclusive curriculum is a curriculum which does not set unnecessary barriers, for example to participation and success, does not set inappropriate entry conditions or does not limit opportunities for progression. Finally, an inclusive curriculum accommodates different kinds of learner and different kinds of learning.

Sections 9.2 to 9.3 report findings which deal more with access and participation, while the following sections are more concerned with findings from the case studies that relate to the adaptation and personalisation of the curriculum.

9.2. Inclusiveness as a goal

The notion of inclusiveness in curriculum policy implies the development of a 'glo-local' curriculum that is flexible, balanced and relevant to each context and individual (Braslavsky, 1999). An outcomes-based approach may be understood as a progressive opportunity to address learners' diversities and achieve an inclusive curriculum. Outcome-oriented curricula should move away from rigid disciplinary and decontextualised content and move towards multiplicity of contextualised, inter-disciplinary and significant resources for the learner. This

may be an effective way to achieve inclusive teaching and learning (Moreno, 2006) as well as to develop autonomous, critical and assertive citizens (Opertti and Duncombe, 2008; Opertti, 2011).

Although there is some evidence in national policy-making that outcome-oriented curricula have been introduced to promote educational inclusion, there is little evidence arising from the examination of the written curricula in the case studies analysed that they have actually been designed to achieve this particular goal. Some curricula, such as the dual systems in Denmark and Germany, have been created to provide an alternative to academic upper-secondary programmes. In Finland, the national core curriculum includes sections on assessment in special education and training and for immigrants.

Recent reforms in vocational curricula in countries such as Denmark, France and the United Kingdom are closely tied to the introduction of systematic processes for the recognition of prior or informal or non-formal learning. Strictly speaking, this falls outside the scope of this research, which is concerned with IVET. However, these changes are leading to widespread changes across IVET qualifications in some countries. In the United Kingdom, for example, most adult vocational qualifications have been unitised, and the units have been allocated standardised volumes in terms of learning hours and credit values. In France, the occupational and curriculum standards have been re-written so that they serve to recognise informal and non-formal learning. The rationale of these reforms is, in both cases, inclusion.

9.3. Inclusiveness through recruitment

The present study shows that, with the right support, outcome-oriented curricula can be used to expand the competences of disadvantaged individuals and improve access to the labour market. In Ireland, for example, the national traineeship programme was designed for workers in employment who wanted to develop their skills and gain a qualification. However, at a time of economic change, the programme has been adapted to meet new needs; one institution has used the programme to address the needs of career changers and the unemployed. Working with a youth agency, the college was able to identify employment opportunities for unemployed youngsters so that they could then join the programme. These young people are receiving additional mentoring through the youth service.

It is a common requirement of alternance programmes that learners must first secure employment as an apprentice before they may access the programme; this is likely to create additional barriers for those who are

disadvantaged in the labour market, for example girls seeking employment in engineering. In some countries, such as Ireland, absence of appropriate apprenticeship opportunities in enterprises has prevented young people from taking up IVET programmes. To overcome this problem, in some countries such as Denmark, the opportunity is given to learners to begin a school-based apprenticeship with the chance of converting to a full apprenticeship later. In Norway, a training company selected the best-performing candidates for apprenticeships through a work experience programme run in collaboration with local upper-secondary schools. Recruitment was driven by the aspiration to achieve the very high competence demands of the sponsoring companies. However, the selection process resulted in the disproportionate recruitment of boys. The training school recognised this as a problem and stated that, if two candidates were of equal merit, they would recruit the girl rather than the boy.

In some other cases, it was difficult to recruit sufficient students of appropriate ability and prior achievement. Teachers from a school visited in Denmark reported that low levels of literacy and weak academic and learning skills work against the successful achievement of vocational learning outcomes ⁽⁴⁰⁾. However, the school reported that there were plans to remedy this by offering a special programme for more talented students.

9.4. Inclusiveness through progression

In general, it was found that vocational programmes, including outcome-oriented curricula, were used by young people to gain access to higher-level education, including university. This was an explicit objective of most of the young people interviewed in case studies, for example in Hungary, Romania and Slovakia. In some countries, such as Slovenia or Sweden, IVET forms a strand within the upper-secondary education and IVET programmes offer a means towards gaining the important school graduation certification which is a pre-condition of matriculation in higher education. In this connection, the design of curricula is concerned not only to reference curricula to competences associated with work but also to reference learning outcomes to the competences and other educational assets that are associated with success in higher education.

Where national qualifications frameworks work in conjunction with points-based entry to higher education, learning outcomes-oriented qualifications can serve to provide learners with a formal qualification that will allow them to enter

⁽⁴⁰⁾ This was confirmed by students at the school who expressed a need for more mathematics.

higher education. In this way, vocational education can provide an alternative route into higher education for those who do not or cannot succeed through traditional general upper-secondary education. It has been an explicit intention in the design of the French *baccalauréat professionnel* and of the English advanced diploma in engineering to establish vocational qualifications which do satisfy the requirements for progression to higher education.

The modular character of many outcome-oriented curricula can also support inclusion. Outcome-oriented curricula were closely associated with modularisation in the UK (England) (the diploma) and Finland. This could lead to more collaborative work between teachers in planning the curriculum and reviewing the progress of individual students. It helps those learners with incomplete or interrupted training histories to gain recognition for their learning, whether in further education or employment. The modular character also permits the development of training programmes which are designed to bridge different levels of national qualification frameworks. For example, both the Irish national traineeship and the English advanced engineering diploma include units which have been assigned different levels. This implies that the programme is tailored to achieve exactly those minimum levels of competence that employers need (for example, a lower level of English is required than that for technical skills) and no more. In the Irish national traineeship, the award consists of units from two levels (levels 5 and 6). This makes it accessible to learners who have not gained the school leavers certificate, and, at the same time, it qualifies them for access to higher education. In this way, it serves to increase progression opportunities for learners who would otherwise have been excluded from higher education.

9.5. Inclusiveness and learning styles

There was an implicit understanding, among many teachers interviewed, that IVET programmes offer a learning style and a curriculum which is appropriate for young people who are at risk of disengagement or failure in conventional academic schools. In other words, IVET programmes offer a means of including young people in education and training. This was explicit in a few countries, for example in the UK (England) and Iceland. In the UK (England), the diploma was seen as a good option by students who are disaffected with conventional education (English case study on diploma).

Different institutions found different ways to provide additional support to students in meeting required standards in key competences, such as mathematics. In some cases, teachers embedded the required mathematical competences in practical work tasks (e.g. Denmark), while, in others, specialised

subject teaching was made available (e.g. the tourism qualification in the UK (England)).

Where national curricula were relatively holistic, this provided opportunities for schools and teachers to develop local curricula that were responsive to their learners and their local communities. There was some evidence that students were able to shape their own projects and, accordingly, make them relevant to their own interests, for example in Denmark. In Ireland and Slovenia, national written curricula in gastronomy included options which permitted diverse cuisines to be explored. These options permitted schools to respond to the interests of particular regional/language groups or of immigrants.

It appears that group work may provide opportunities for teachers to address objectives of social integration and social inclusion. However, in general, teachers identified as their main goals the development of occupational competences or/and examination success for their students.

There are methods, such as cooperative/team teaching, peer tutoring, heterogeneous grouping, differentiated teaching strategies and assessment for learning, giving the opportunity to assess and evaluate students' own learning targets, which are particularly effective for learners with special education needs, although these are not yet in widespread use across IVET institutions in Europe ⁽⁴¹⁾. Provision with respect to inclusion of students with special education needs varied between the institutions visited that teach the same programme. For example, in Denmark, one school has in-house expertise on special needs and was able to carry out diagnosis and propose appropriate learning styles, while a second school did not.

The present research was not focused on special educational needs, it points only to the need to raise awareness among policy-makers and practitioners that inclusive and learner-centred approaches to teaching and learning benefit all learners, not just some.

'Good inclusive teaching and learning is good teaching and learning. It is about what society we want and seeing education as a way of getting there: a society that values diversity and aims to meet the needs of the most and least able' (Watkins, 2011).

⁽⁴¹⁾ Vocational education and training: policy and practice in the field of special needs education (2010-12), project undertaken by the European Agency for Development in Special Needs Education: <http://www.european-agency.org/agency-projects/vocational-education-and-training> [accessed 15.10.2012].

9.6. Key findings

Although inclusiveness was not the main focus of this study, the following findings merit attention:

- (a) an outcomes-based approach to curriculum design may be understood as a progressive opportunity to address learners' diversities and achieve an inclusive curriculum. New outcome-oriented curricula in initial vocational education and training may be combined with other policies and tools, such as unitisation, credit transfer and the recognition of non-formal learning, with a view to improving inclusion in education and training;
- (b) inclusiveness is not usually explicitly addressed in written curricula. Although there is some evidence in policy discourse that outcome-oriented curricula have been introduced to promote educational inclusion, there is little evidence arising from the examination of the written curricula that they have actually been designed to achieve this particular goal;
- (c) outcome-oriented curricula can make assessment criteria more prescriptive, which might have the effect of reducing flexibility for disadvantaged learners and learners with special education needs. There is a risk of competences being specified in a manner that would exclude some special needs learners. However, increased transparency about assessment requirements may reduce hidden forms of discrimination and make it easier to provide appropriate support to disadvantaged learners;
- (d) particular learner-centred pedagogies (e.g. self-directed learning, including the use of online resources; peer learning of various kinds; creative approaches to learning; work-based and work-related learning of various kinds) can support inclusiveness and benefit learners. Project work, for example, appears to engage and motivate learners. It can provide opportunities to develop the autonomy and generic skills of students, and it promotes the application of knowledge and skills. It can also bring together and consolidate learning, helping to combine separate learning outcomes in coherent and contextualised competences. However, teachers in most of the schools visited were concerned more about the acquisition of the expected learning outcomes for their students and their success in exams, and less about ensuring inclusiveness.

CHAPTER 10.

Conclusions and policy messages

This final chapter sets out the main conclusions of the study and highlights issues that may be of relevance to policy-makers, practitioners and researchers.

Socio-economic factors along with European policies and tools have intensified curriculum reform over the past decade in Europe. Learning outcomes provide the foundations for curriculum-making in all European countries, although approaches do vary. Differences in conceptualisation of competence and learning outcomes may be significant in explaining such differences.

Curriculum reform has been a feature of IVET policy in every European country over the past 5 to 10 years. Learning outcomes have been deeply implicated in these developments and are now taken for granted as part of curriculum development, since they are believed to support and enable a better fit between VET and the labour market. While, in some countries, outcome-oriented curriculum reforms date back to the 1990s or earlier, over one half of the countries examined, mostly those in central and eastern Europe and the Mediterranean countries, have introduced outcomes orientation since 2005.

It is mainly economic factors which relate to the policy of seeking to improve national competitiveness through skills development that have boosted these curriculum reforms in recent years. Furthermore, outcomes orientation has often been driven by the introduction of national qualification frameworks and credit transfer systems, underpinned by European initiatives and tools such as the EQF and the European credit system for VET (ECVET). Issues relating to the validation of non-formal and informal learning have also been influential in the development of policy on outcome-oriented curricula in many countries and the rewriting of qualifications and standards. On the contrary, inclusion and learner-centredness, while being high on the EU policy agenda, do not feature prominently in national policy. In only a small number of cases, objectives related to inclusion, reducing early school leaving and improving levels of basic educational attainment are explicitly cited as factors in the introduction of learning outcomes in curricula. In all cases, social factors along with the rationale for modernising curricula to increase their quality and relevance are implicit.

Despite the common features found in the motivation for curriculum reform, the shape and form that outcome-oriented curricula ultimately take vary depending on distinctive national, regional and local characteristics. How outcome-oriented approaches are conceptualised and, in particular, how competence and learning outcomes are used and interpreted has often influenced national curriculum policies. In some countries, IVET curriculum development is greatly influenced by other ideas, such as national values about the role of education or other national reforms.

Although the introduction of outcome-oriented curricula appears to be a major structural change in initial vocational education and training in Europe, the state of developments in each country is subject to ongoing adjustments. Education and training systems are dynamic, and the political process is constantly balancing and rebalancing priorities in response to a wide range of pressures. Wider economic circumstances may also be having an effect on the further development or implementation of policy. On the one hand, training has functioned as an active policy against the financial difficulties confronting citizens; on the other, in some countries, economic and administrative constraints have slowed down reforms and created uncertainty about policy continuation and sustainability.

Effective representation in the curriculum design process is vital to ensure responsiveness and relevance. Multiple stages in the design process of curricula may lead to the involvement of a greater number of diverse stakeholders. Decentralisation of the curriculum design process may bring about an adaptation of the curriculum which serves the needs of both employers and learners more effectively.

The curriculum development process is understood as the development of different standards (the occupational standard, the qualification/evaluation standard, the education/curriculum standard and the training standard or learning programme), each of which has a different role to play but all of which need to mesh together so as to ensure a good fit between VET and the labour market. These multiple stages in the design process of curricula may lead to the involvement of a greater number of diverse stakeholders. Countries differ in the degree to which they differentiate between such stages. This is often related to the extent to which IVET curricula combine both vocational and general education elements.

Effective representation of stakeholders in the different stages of curriculum development is a prerequisite for valid and credible curricula. Representation

may be achieved by different means, including appointing the social partners and stakeholders to working groups and through consultation. Not all countries examined in this study have strong and long-standing representation. There are cases where the introduction of new curricula has strengthened stakeholders' involvement, but there were concerns about whether this engagement could be sustained. One of the (potential) advantages of increasing differentiation between stages is that it increases the likelihood of involving a wider variety of stakeholders. However, the way in which the different stages of the curriculum design process work together (or fail to do so) should be periodically reviewed. The research identified the need for a more effective feedback mechanism between the different stages and the functions they perform. Those who participate in curriculum design should understand how their decisions have an impact (or have little or no impact) on teaching and assessment so that design decisions may be based on realistic expectations. This could contribute to an understanding of whether different ways of organising the design process actually lead to more representative, collaborative decision-making with improved results, i.e. more appropriate and effective curricula.

Where governance is decentralised, this provides increased opportunities for stakeholder representation, and it may increase the capacity of particular groups of stakeholders to have a positive influence on the process. Over time, interest groups develop an ability to work together and to find ways to negotiate their differences and reach compromises. This may be easier to do at local, regional or sectoral level, as the parties involved have common interests and shared values. The research provides evidence that decentralisation of curriculum-making can bring about an adaptation and contextualisation of the curriculum which better serve the needs of both employers and learners. This is because it can encourage relationships between schools and local companies. However, the capacity of participants at local level to engage in curriculum design was found to be highly variable among countries. Curricula developed at provider level depend on the establishment of effective partnerships and negotiations at local level. Moreover, the potential for development of the written curriculum at local level is not always fulfilled. Often, school-based curriculum-writing is simply a matter of timetabling and sequencing. The extent to which greater responsibility can be given to the development of the curriculum and cooperation between schools and stakeholders at local level is a key issue in curriculum design. Schools and colleges could benefit from greater consideration as to how to engage employers in the process and, in some cases, from sharing examples of best practice. Equally, local providers would benefit from national/regional support to help develop their capacity.

In most cases, students' involvement in outcome-oriented curriculum design has been underrepresented. Awareness should be raised that, where consultation does involve students, it becomes possible to ensure that learning outcomes are intelligible and responsive to learners. At national level, the student voice could be given greater weight in the curriculum design process, for example through the use of focus groups and web-based methods of participation; at local level, this could be ensured through collaboration with teachers to negotiate the curriculum, for example to design their own learning projects and, to some degree, select their own content and context.

The written curriculum may affect the behaviour of teachers and their pedagogical autonomy. How learning outcomes are grouped and how they connect to other material in the curriculum can have implications for teaching and assessment. It is therefore important to ensure the right level of prescription in the written curriculum.

The impact of written curricula on teaching and learning depends not only on which learning outcomes are included but also on how they are grouped and the various ways in which knowledge, skills and competence are distributed within curricula. For example, some curricula require that certain competences are taught and learned together, while others leave it to the discretion of teachers. Curriculum design could be supported by an improved understanding of how different strategies for organising learning outcomes affect (or fail to affect) teaching and learning. The manner in which learning outcomes are articulated in curricula will enable or constrain distinctive teaching and assessment methods. For example, if skills and knowledge are formulated as distinct learning outcomes, then they may be taught and assessed separately. The level of detail of the outcomes used in curricula (the degree of granularity) may have important implications for teaching methods and for learners' assessment. A high level of prescription may increase the reliability of assessment and the consistency of teaching and, accordingly, help to ensure that VET provision does reflect the competences required more accurately. However, prescription may also have negative effects, leading to excessive complexity, overly instrumental approaches to teaching and learning (reduced teacher autonomy) and a lack of relevance for particular learners and employers by reducing responsibility for tailoring at local level.

Consequently, there are trade-offs between the advantages that come from sophisticated, participative, national development processes with a high level of transparency and prescription and those resulting from a lower level of

prescription which leave more room for teachers and local stakeholders (including learners) to define their own curriculum. There are various ways of ensuring a degree of prescription in the curriculum, and curriculum designers may find that, by making changes to several elements of the written curriculum simultaneously, they can avoid some negative consequences. For example, they can choose to reduce national control over the granularity of learning outcomes but tighten national control over assessment criteria.

The curriculum development process faces a number of challenges that need to be carefully considered from the outset. The appropriate use of expertise can help overcome some of these challenges.

Assessment should be made not only of the added value that outcome-oriented curriculum design can bring to teaching and learning processes but also the associated costs and obstacles. There are a number of challenges to the effectiveness and smooth running of curriculum development processes. These include establishing and maintaining employers' involvement, reconciling conflicts of interest, ensuring that the process of writing learning outcomes is transparent and fully accessible to all participants, ensuring that the process of curriculum reform is not overly protracted and balancing this with the need to ensure that all relevant stakeholders are actively involved.

The writing and structuring of learning outcomes in written curricula may become an increasingly technical exercise. Experts with specific know-how in this matter can play a significant role in informing the development of written outcome-oriented curricula and in working with stakeholders to reconcile differences and solve problems. Experts may work for public curriculum agencies, employers' organisations, the social partners or awarding bodies. They may be employees or consultants. Their role might become more important as highly differentiated processes, which are often more complex and technical, develop in support of outcome-oriented curricula. This research pointed out that some countries have experienced problems in finding the expertise required.

Learner-centred pedagogies can support the delivery of outcome-oriented curricula; however, barriers exist that prevent them from being used more extensively.

There is no straightforward relationship between the development of a stronger outcomes orientation within written curricula and learner-centred approaches used to deliver the taught curriculum, since pedagogy is influenced

by many factors outside the written curriculum, such as teachers' habits and values and the expectations of their schools. The teachers interviewed do not automatically associate outcome-oriented curricula with learner-centred teaching methods. Usually, when learner-centred pedagogies are articulated in some detail in written curricula, this is associated with the use of learner-centred pedagogies in practice. However, the same written curriculum may be delivered in different ways: one school may use open learning methods while another may use more traditional whole-class approaches.

The teachers and students interviewed are in favour of learner-centred approaches, as they consider them appropriate for teaching outcome-oriented curricula. Learners in particular value learning experiences that are closely related to the world of work, for example simulated and authentic on-the-job learning. However, little consideration has been given at policy level to what types of pedagogies might best support outcome-oriented curricula. This is further complicated by the fact that learner-centred pedagogies are not consistently defined or understood. Sets of learner-centred pedagogies are emerging from professional circles and communities which include project work, group learning, simulations, role play, independent study and problem-solving. Project work appears to engage and motivate learners. It can provide opportunities to develop the autonomy and generic skills of students, and it promotes the application of knowledge and skills. It can also bring together and consolidate learning, helping to combine separate learning outcomes in coherent and contextualised competences. It is important to develop a clearer understanding of the differences and similarities between various 'learner-centred' approaches and to understand what kind of impact they have on teaching and learning in practice and how this connects to the character of the written curriculum. It should be further investigated how particular pedagogies (for example self-directed learning, including the use of online resources; peer learning; creative learning; work-based and work-related learning) can support outcome-oriented curricula.

There is a need for a better understanding of how the behaviour of teachers and learners changes (or fails to change) as a consequence of the introduction of new curricula. Why do some teachers in some schools appear to respond more positively to curriculum reform than others and what kinds of interventions, such as the provision of training, can support positive responses? An improved understanding of the process of pedagogical innovation should inform reforms that imply changes in pedagogy. It is important to understand better how effective professional development agencies, networks of teachers, training programmes and official guidance are as means of developing pedagogy.

Furthermore, the position of students in relation to learning outcomes merits further attention. It is a concern that learning outcomes are not always understood by learners. Learner-centred pedagogies and formative assessment should enable learners to interpret learning outcomes and make use of them to plan their own learning.

The quality and character of learning environments and the use of appropriate learning materials are vital to the delivery of outcome-oriented curricula. Workplace learning plays an important role in delivering these curricula; however, there are challenges in exploiting its full potential.

The quality and character of learning environments are critical for the delivery of outcome-oriented curricula, although this was often expressed in terms of not having the right mix of learning environments and, in particular, not having access to laboratories or workshops either at all or at the right time. Accordingly, teaching activities often had to be planned on the basis of these realities. In some cases, teachers developed their own material to teach the new curriculum. In other cases, work-like environments were developed to provide a real work setting.

The introduction of an outcomes orientation in curricula has often taken place alongside an increase in the requirements for experience in the workplace. On-the-job learning can play a critical role in outcome-oriented curricula by providing a real-life setting in which learning can be consolidated. While being beneficial, such provision places additional responsibility on teachers, learners and employers to organise workplace learning and coordinate learning across different sites. There can also be problems in simply finding sufficient opportunities for work experience. Although learning outcomes should also reflect employers' needs, there is evidence that employers need assistance in understanding learning outcomes and applying them to specific situations. Many of the schools visited were seeking ways of making better use of the workplace as an environment for learning.

With the right support, outcome-oriented curricula can promote inclusion in education and training. New curricula can be combined with other policies and tools, such as modularisation, unitisation, credit transfer and the recognition of non-formal and informal learning, with a view to improving inclusiveness.

Outcome-oriented curricula should improve inclusiveness in teaching and learning and promote educational inclusion in the sense of widening access, encouraging people to go on to further studies and extending participation, achieving equitable learning outcomes with all students, etc. This is particularly important at a time when many European countries are facing high rates of early school leaving with significant economic and social consequences not only for young people themselves but also for the economy and society as a whole.

An outcomes-based approach may be understood as a progressive opportunity to address learners' diversities and achieve an inclusive curriculum. The present study shows that, with the right support, outcome-oriented curricula can be used to expand the competences of disadvantaged individuals and encourage progression in education and training and/or improve access to the labour market. However, although, in the majority of cases, there is a policy intention to promote educational inclusion, the examination of the written curricula included in this research provides little evidence that they have actually been designed to achieve this particular goal.

On the whole, while national policy has focused on reforms to the written curriculum, very little consideration, by comparison, has been given to the question of how new curricula might affect teaching and learning. Outcome-oriented curriculum reform needs to be balanced with more consideration of the taught curriculum. The implementation of outcome-oriented curricula should be carefully monitored and reviewed to ensure that these curricula are effective in delivering their intended goals.

List of abbreviations

AET	adult education and training courses
APL	accreditation of prior learning
ASOO	Croatian National Agency for VET and Adult Education
BEP	<i>brevet d'étude professionnelle</i> (school-leaving diploma)
BIBB	Federal Institute for Vocational Education and Training
BTEC	Business and Technical Council
BTS	<i>brevet de technicien supérieur</i> (two-year technical degree, level EQF5)
CAP	<i>certificat d'aptitude professionnelle</i> (vocational training certificate taken at secondary school, level EQF3)
CCF	controlled assessment
CEE	central and eastern European
CEOE	Spanish Confederation of Employers' Organisations
CGFP	<i>Consejo General de Formación Profesional</i> (General Council for Vocational Training)
CNC	computer numerical control
CPC	<i>commission professionnelle consultative</i> (vocational advisory committee)
CSE	Higher Council of Education in France
CVET	continuing vocational education and training
DGESIP	General Directorate for Higher Education and Employability
DGESCO	General Directorate of School Education, French Ministry of Education
ECTS	European credit transfer and accumulation system
ECVET	European credit system for vocational education and training
EQF	European qualifications framework
ESF	European Social Fund
EU	European Union
FETAC	Further Education and Training Awards Council
FI	Fáilte Ireland
FIEEC	Federation of Electrical, Electronics and Communications Industries
FSAI	Safety Authority of Ireland
GTC	General Teaching Council
INCUAL	<i>Instituto Nacional de Cualificaciones</i> (National Institute of Qualifications)
ISCED	international standard classification of education
IVET	initial vocational education and training
MES	module employment skills
MoE	Ministry of Education
NQF	national qualifications framework
NVQ	national vocational qualification
PTE	practical training in enterprise
QCDA	Qualifications and Curriculum Development Agency
QCF	qualification and curriculum framework
RVCC	recognition, validation and certification of competences
SEN	systèmes électroniques et numériques (electronic and digital systems)
SZVK	professional and examination requirements (in Hungary)
TP	training plan
UGT	Unión General de Trabajadores (General Workers' Union)

UIMM	Union of Metallurgical Industries and Trades
VET	vocational education and training
VVKSO	Vlaams Verbond van het Katholiek Secundair Onderwijs (Flemish Association of Catholic Secondary Education)
WEB	Wet Educatie en Beroepsonderwijs (General Adult Education and Vocational Education Act)

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ANNEXES:

Examples of outcome-oriented curriculum design

Annex 1 includes a list of interviewees who have agreed to have their names published. Annexes 2 to 9 provide examples of different approaches to the design of outcome-oriented curricula. Examples further illustrate how learning outcomes combine with other material in curriculum documents to set norms for teaching, learning and assessment. They show how learning outcomes articulate with occupational, qualification, education and training standards, how they connect with assessment criteria and how they link to the content of written curricula.

ANNEX 1. List of interviewees

List of interviewees ⁽⁴²⁾:

Austria	3s Research Laboratory	Karin Luomi-Messerer, VET expert
	Ministry of Education, Mechatronics Department	Wolfgang Pachatz, VET expert
Belgium	Catholic University of Louvain la Neuve	Xavier Roegiers, professor in science of education
	Flemish Department of Education and Formation	Rita Dunon, advisor, Ministry of the Flemish Community, Department of Education, Policy Coordination Division
	Vlaams Verbond van het Katholiek Secundair Onderwijs (VVKSO)	Carl Snoeckx, specialist secondary education
	VVKSO	Eddy Van Autreve, specialist secondary education
	VVKSO	Ann Ysenbrandt, specialist secondary education
Bulgaria	Confederation of labour Podkrepa	Krasimira Brozig, training and career development field
Czech Republic	Department of international cooperation, ReferNet CZ coordinator, National Institute for Technical and Vocational Education	Martina Kanakova, VET expert
	National Institute for Technical and Vocational Education, expert for tourism and gastronomy	Tatana Vencovska, VET expert
Croatia	National VET institute - vocational education and training (quality assurance development)	Maja Jukić, VET expert
	National expert, secondary VET school, Rovinj	Ivan Sazdevski, headmaster
	National VET institute	Jelena Letica, VET expert
	VET school in Rovinj	Mislav Balković, VET expert and Director
	VET school in Rovinj	Ivan Sazdevski, headmaster
Cyprus	ReferNet Cyprus, Research and Planning Directorate, Human Resource Development Authority	Yianna Korelli, ReferNet coordinator and human resource officer
	Directorate of Technical and Vocational Education, Ministry of Education and Culture	Nicolas Andilios, technical and vocational school inspector
	STVE Directorate	Andreas Eleftheriou, inspector

⁽⁴²⁾ This list includes the names of those experts who have given us consent to publish their names. In total, information was obtained from 319 interviewees.

Denmark	Department for Curriculum Research, the Danish School of Education, Copenhagen	Pia Cort, assistant professor
	Education Board for Commercial and Office Area, Copenhagen	Per Clausen, secretariat for commercial qualifications
	Aarhus University, Department of Education, curriculum research	Vibe Aakrog, lecturer in VET pedagogy
	Aarhus University, Department of Education, curriculum research	Sixten Wie Bang, researcher
	Danish Education Department	Gert Nielsen, national curriculum manager
	Industriens Uddannelser	Niels Bylund, consultant
Estonia	Ministry of Education and Research	Kalle Toom, Head of vocational division
	National Examination and Qualifications Centre, the Vocational Education Department	Katrin Tammjärv
Finland	Finnish National Board of Education (FNBE)	Sirkka-Liisa Kärki, Head of qualifications unit, counsellor of education, vocational education department
	Finnish National Board of Education	Kati Lounema, chief technologist
	Salpaus further education (Koulutuskeskus Salpaus)	VET expert
France	Patrick Werquin Consulting and Toulouse business school	Patrick Werquin, consultant, professor at CNAM
	French National Qualifications Commission	Anne-Marie Charraud, consultant
	Ministère de l'éducation	Brigitte Trocmé, adjointe au chef du bureau des diplômes professionnels (DGESCO A2.3)
	Reims Academy	M. Camus, inspector for Bac Pro SEN
Germany	University Bremen	Klaus Ruth, ITB, VET expert
	Federal Institution for VET Bundesgesetzblatt	Gert Zinke, VET expert
	University Bremen	Georg Spöttl, VET expert
	University Darmstadt	Simon Laub, expert
	German Institute for Adult Education	Mona Pielorz, expert
Greece	At the time of the study: EKEPIS (the National Accreditation Centre for Continuing Vocational Training), Ministry of Labour	Tina Simota, programmes accreditation unit
	At the time of the study: Greek Ministry of Education	Anastasia Poulou, Greek delegate to the activities of the Commission on the EQF
	EOPPEP National Organisation for the Certification of Qualification and Professional Guidance	Giannis Kapoutsis, Head of group planning and organisation certification qualifications
	Ministry of Education, Lifelong Learning and Religious Affairs	Dimitris Kondylis, Maria Katechi

	General Secretariat for Adult Education, Ministry of Education	Magda Trantallidi, Head of Department for International Cooperation
	Ministry of Education, Lifelong Learning and Religious Affairs	Alexandra Ioannidou, advisor to the Minister for Lifelong Learning Policy
Hungary	University of Szeged, Faculty of Juhász Gyula teacher training	Eva Farkas, external advisor to the Ministry for National Economy, teacher trainer, vocational and examination requirements writer
	Hungarian National Institute for Educational Research and Development	Anna Imre
	National Institute of Vocational and Adult Education	Magdolna Benke
	Representative of the Confederation of Hungarian Employers and Industrialists	Sum István, General Director of Sztáv
	Regional Development Committee - Central Hungary Region	Óvári Márta
	Pecsi Kereskedelmi, Idegenforgalmi és Vendéglátóipari Szakközépiskola és Szakiskola	Metzger Tibor, Director
	EFEB Üzleti Szakközépiskola	Takács Istvánné, Director
Iceland	Department of Education, Ministry of Education, Science and Culture	Björg Pétursdóttir sérfræðingur, adviser
	Division for vocational and adult education, Ministry of Education, Science and Culture	Kristrún Ísaksdóttir, adviser
Ireland	Further Education and Training Accreditation Council (FETAC)	Marie Gould, Head of new awards
	Department of Education and Science, further education section	Seamus Hempenstall, principal officer
	Failte Ireland	Sean O Malley, manager education operations
	Further education support service (FESS)	Siobhan Magee, further education support officer
Italy	ISFOL (Institute for the development of the vocational education and training of the workers)	Manuela Bonacci, technical researcher, NQS, EQF and ECVET
Latvia	National Educational Curricula Centre in Latvia	Sarmite Valaine, Head of the vocational programmes content department
	Tourism and trade school in Riga	Lubova Vinogradova, teacher
Liechtenstein	National office for VET and career counselling	Georg Kaufmann, Head of career counselling
Lithuania	Centre for Vocational Education and Research	Vidmantas Tutlys, VET expert
	Centre for Development of VET and Qualifications	Vicentas Dienys, VET expert
Luxembourg	At the time of the study: Ministry of Education and Vocational Training	Jos Noesen, Chargé de Mission, EQF
Malta	Institute of Tourism Studies	Adrian Mamo, Executive Director

	Institute of Tourism Studies	Rosetta Thornhill, Deputy Director
	Institute of Tourism Studies	Max Mangion, scheduling officer
	EastCoast Education	Barry Smith, consultant
Nether-lands	Centre for expertise in vocational education and training (ECBO)	Ilya Zitter, senior researcher
	Occupational training and qualifications, Kenteq (sector body for electronics)	Meta Benschop, qualifications expert
Norway	Curriculum Department, Directorate for Education and Training	John Christian Christiansen, adviser
	K-Tech	Svein Erik Lurdalen, general manager
	CONSULTUR studies and analyses	Odd Bjørn Ure, consultant
Poland	Zablocka, Institute for VET	Elżbieta Drogosz-Zabłocka, VET researcher
	University of Warsaw	Barbara Minkiewicz, VET researcher
	University of Warsaw	Gabriela Grotkowska, VET expert, professor
	University of Warsaw	Tomasz Gajderowicz, VET researcher
Portugal	National Qualifications Agency	Paulo Feliciano, Ex-Deputy Director
	ANESPO– Associação Nacional de Escolas Profissionais	Luis Costa, Executive Director
Romania	National Centre for VET Development	Zoica Elena Vladut, Deputy Director
	National Centre for VET Development	Mihaela Stefanescu
	Travel agency	Nelida Ismail, teacher, curriculum developer/writer, travel agency manager
	University of Bucharest, Faculty of Psychology and Educational Sciences	Lucian Ciolan, Dean
	Colegiul Economic Mangalia	A Vargatu, Director
Slovakia	State Institute of VET (Štátny inštitút odborného vzdelávania)	Gabriela Jakubová, Deputy Director for VET programmes
	Engineering VET school (Stredná priemyselná škola strojnícka), Fajnorovo nábrežie 5, Bratislava	Felix Dömény, headmaster
	Engineering VET school in Myjava (Stredná priemyselná škola strojnícka Myjava)	Alena Palková, headmaster
	Secondary vocational school in Dubnica nad Vahom, Deputy Director of VET school	Ing. Ladislav Matuška
	PosAm, Co. Ltd.	Lucia Klestincova, VET researcher
Slovenia	University of Ljubljana	Samo Pavlin, VET expert, assistant professor
	Secondary school for hairdressers – Ljubljana	Primož Hvala Kamenšček, headmaster and VET expert
	Centre for Vocational Education and Training	Jelka Drobne, tourism curricula specialist

	Centre for Vocational Education and Training	Elido Bandelj, Director
	Centre for Vocational Education and Training	Anica Justinek, VET expert
Spain	INCUAL (National Institute for Qualifications)	Francisca Maria Arbizu Echavarri, former Director
	IES Hotel Escuela de la Comunidad de Madrid	Miguel Pérez Pérez, Director
	IES Escuela Superior de Hostelería y Turismo, Madrid	Antonio Morales Martinez, Director
	INCUAL (National Institute for Qualifications)	Catalina Zarauza Norato, technical assistant
	KL-Guides	Lucía Acuña, manager, tourist guide
	Asociación de federaciones de guías European Federation of Tourist Guide Associations	A. Carlos, Deputy President: Feg president personal
Sweden	Division for upper secondary education	Kritjof Karlsson, Deputy Director
	Department of Analysis and Research, Swedish National Agency for Higher Vocational Education	UllaKarin Sundqvist Nilsson, senior administrative officer
	Skolverket, National Agency for Education	Cristina Pontis, Director of education
Turkey	Hacettepe, vocational school of social sciences	Reha Alpar, Director
	Hacettepe, vocational school of social sciences	Mehmet Altinoz, Vice Director
UK (England)	People First	Two tourism sector experts
	SEMTA	Bill Sutton, sector expert
	Royal Academy of Engineering	Matthew Harrison, Director education
	King Edward VII School, Sheffield	Gary Drabble STEM, strategy manager

Source: Authors.

ANNEX 2.

Examples of differentiated curriculum development approaches

In the examples below, it is possible to distinguish the various stages corresponding to occupational, qualification, education and training standards. However, a separate document is not always published for each of the four standards. In France, for example, all of the stages are published as a single document which is divided into various sections and appendices. The terminology used by individual countries reflects national perceptions. For example, the statements known as *compétences* in the French *référentiel de certification* appear to function as the statements that the model identifies as learning outcomes. The Romanian document, whose title literally translates as ‘training standard’, performs the function of what is known as the qualification standard in the model. A Slovenian term that literally translates as ‘goals’ appears to function as learning outcomes.

In Luxembourg, there are five different stages in the development of outcome-oriented curricula: definition of the competences; definition of the learning outcomes; definition of the learning modules; definition of the assessment criteria; and definition of the local training programme.

Table 7 **Stages in the development of tourism and gastronomy curriculum in Slovenia in comparison to the theoretical model**

Model documents	Occupational standard	Qualification standard	Education standard			Training standard (learning programme)
Model elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum			Learning outcomes in teaching or training modules
Slovenia: documents	Occupational standard	National curriculum (<i>Nacionalni izobraževalni programme</i>)				School curriculum, designed by the providers
		General educational and vocational goals	Catalogues of knowledge – general subjects	Catalogues of knowledge – vocational modules	Catalogues of examinations	
Slovenia: components	Occupational competences; areas of work, key job tasks, skills and knowledge	General competences, vocational competences	Goals; units with knowledge and general competences and assessment criteria and methods	Goals; units with vocational competences and informative and formative goals (learning outcomes)	Assessment criteria and methods, learning outcomes	Modules: content and learning outcomes assessment criteria tests and tasks: learning outcomes (skills, knowledge)

NB: Theoretical model in dark blue.
Source: Slovenian case study.

Table 8 **Stages in the development of technician in tourism curriculum in Romania in comparison to the theoretical model**

Model documents	Occupational standard	Qualification standard	Education standard	Training standard (learning programme)
Model elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum	Learning outcomes in teaching or training modules
Romania: documents	Occupational standard	Training standard	Curriculum	Programmes designed by providers
Romania: elements	Competences	Units comprising learning outcomes and performance criteria and range statements	Modules – containing learning outcomes	

NB: Theoretical model in dark blue.

Source: Romanian case study

Table 9 **Stages in the development of *baccalauréat professionnel des systèmes électroniques et numériques* curriculum in France in comparison to the theoretical model**

Model documents	Occupational standard	Qualification standard	Education standard		Training standard
Model elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum		Learning outcomes in teaching or training modules
France: documents	<i>Référentiel d'activités professionnelles</i>	Référentiel de certification – consisting of several sections:			Programmes with different education routes: school, enterprise, apprentices
France: elements	<i>Fonctions et activités</i>	Competences and subcompetences	<i>Savoir-associés</i>	Content, guidance for teachers, inspectors, etc.	

NB: Theoretical model in dark blue.

Source: French case study.

Table 10 **Luxembourg: stages in the development of IVET curricula in comparison to the theoretical model**

Model: documents	Occupational standard	Qualification standard	Educational standard		Training standard
Model: elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum		Learning outcomes in teaching or training modules
LU: documents	<i>Berufsprofil</i>	<i>Ausbildungsprofil</i>	<i>Rahmen- lehrplan</i>	<i>Evalui- erungs- rahmen</i>	Local curricula
LU: elements	<i>Arbeitsbereiche, Aufgaben, Tätigkeiten</i>	<i>Kompetenzen: Sach-, Sozial- und Selbst-kompetenz</i>	<i>Module</i>	<i>Indika- toren Standards + Assess- ment Methoden</i>	

NB: Theoretical model in dark blue.
Source: Luxembourg country review.

The above tables provide a broad conceptualisation of what happens in each country. The detailed institutional and administrative process is, of course, much more complex. The following example describes this formal process through which the *baccalauréat professionnel des systèmes électroniques et numériques* was developed in France and illustrates the variety of actors and stages involved.

Table 11 **France: development of *baccalauréat professionnel des systèmes électroniques et numériques* in comparison to the theoretical model**

Phases	Actors involved in the vocational <i>bac</i> SEN	Example of actors and key dates in connection with the vocational <i>bac</i> SEN
Request for creation or renewal	Professional bodies, enterprises, Ministry of Education (MoE)	Date of request for renewal: 2003
First analysis: Opening of a folder ('dossier')	General secretary	22 March 2004: report for first analysis
Feasibility study for gathering data on: <ul style="list-style-type: none"> the industry or the occupation employment: trends, characteristics labour market pre-existing relevant training and qualifications 	Stakeholders: expression of needs <ul style="list-style-type: none"> experts: confirmation of those needs, with formalisation Ministry of Education (MoE), Directorate-General for School Education (management of curricula, DGESCO), in particular division for partnerships with enterprises 	FIEEC (Federation of Electrical, Electronics and Communications Industries) UIMM (Union of Metallurgical Industries and Trades) – e.g. Céreq (Centre for Studies and Research on Qualifications) – CPC No 3 (CPC for Metallurgy)
Review during CPC session: decision to start the actual work (development of qualification standard)	CPC (<i>commission professionnelle consultative</i> – vocational advisory committee), etc.	21 December 2004 (CPC No 3); review on 25 June 2008 and 6 February 2009
Writing of the qualifications standards	Working group: professionals, inspectors, teachers, Ministry of Education (DGESCO)	During 2004: professionals sent by FIEEC and UIMM; inspectors (appointed by MoE for this vocational sector); teachers sent by inspectors
Writing of certification arrangements	Working group with: MoE, office for the regulation of qualifications – DGESCO (secondary education plus tertiary non-university) or DGESIP (rest of tertiary education)	2004; review in 2005 to add annexes setting out assessments rules; 2009 to 2011: amendments to some of the qualification's content (addition of optical fibres support)
Presentation of the qualification to the CPC	CPC Higher Council of Education (CSE)	21 December 2004 and 10 December 2005; CSE on 22 March 2006; review on 21 March 2011 and 29 November 2011
Official presentation of the qualification	Ministry of Education Ministerial officials responsible for designing decrees	
Decree establishing the qualification		28 April 2005: creation of the renewed qualification, vocational <i>bac</i> SEN; 15 May 2006: additional sections

NB: Theoretical model in dark blue.

Source: French case study.

ANNEX 3.

Examples of undifferentiated curriculum development approaches

Table 12 **UK (England): stages of curriculum development for NVQ level 3 in travel services in comparison to the theoretical model**

Model: documents	Occupational standard	Qualification standard	Education standard	Training programme
Model: elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum	Learning outcomes in teaching or training modules
UK (England): documents	Occupational standard	National vocational qualifications		Programmes designed by providers
UK (England): elements	Competences	Learning outcomes and assessment criteria organised into units		

NB: Theoretical model in dark blue.

Source: English case study.

Table 13 **Ireland: stages of curriculum development for traineeship in professional cooking in comparison to the theoretical model**

Ideal type	Occupational standard	Qualification standard	Education standard	Training programme
Model: elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum	Learning outcomes in teaching or training modules
Ireland: documents	Awards – composed of ‘modules’ which are composed of ‘units’			Programme profile
Ireland: elements	Learning outcomes organised in units			Modules and learning outcomes and mark allocations

NB: Theoretical model in dark blue.

Source: Irish case study.

Table 14 Finland: stages of curriculum development for qualification in tourism sales, information services and travel counsellor in comparison to the theoretical model

Model: documents	Occupational standard	Qualification standard	Education standard	Training programme
Model: elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum	Learning outcomes in teaching or training modules
Finland: documents	National qualification requirements – modules including vocational and key competences and assessment criteria			Learning programme
Finland: elements	Units containing learning outcomes			Modules

NB: Theoretical model in dark blue.
Source: Finnish case study.

Table 15 Spain: stages of curriculum development for higher technical tourist guide, information and assistance in comparison to the theoretical model

Model: documents	Occupational standard	Qualification standard	Education standard	Training programme
Model: elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum	Learning outcomes in teaching or training modules
Spain: documents	Professional qualification (becomes part of national catalogue of professional qualifications)		Professional modules (become part of national catalogue of professional modules)	Regional and institutional programmes
Spain: elements	Competence units: descriptors of professional performance, performance criteria and professional context		Modules (with hours and ECTS credits) consisting of learning outcomes and assessment criteria and content	Carry forward learning outcomes, but may change sequence and add options

NB: Theoretical model in dark blue.
Source: Spanish case study.

ANNEX 4.

Examples of semi-differentiated curriculum development approaches

Table 16 **Hungary: stages of curriculum development for tourism adviser curriculum compared to the theoretical model**

Model: documents	Occupational standard	Qualification standard	Education standard	Training programme
Model: elements	Competences	Learning outcomes grouped into units with assessment criteria	Learning outcomes linked to content, guidance and references to the rest of the curriculum	Learning outcomes in teaching or training modules
Hungary: documents	Professional examination requirement		Central programme	Programmes designed by providers
Hungary: elements	Task and character profiles (knowledge and skills)		Units cover professional, methodological, personal and social competences	

NB: Theoretical model in dark blue.

Source: Hungarian case study.

ANNEX 5.

Competences in occupational standards connected to learning outcomes in qualification standards

The present example shows the manner in which competences in occupational standards are reformulated or re-organised when they are translated into learning outcomes in qualification standards, i.e. in the written curriculum. The outcome-oriented approach implies that the written curriculum must be structured and formulated in a way that both reflects the formulation of competences and takes into account the context and practicalities of training and assessment.

The English and Spanish examples below can be used to contrast two basic types of relationship. In the case of the English qualifications, the formulation and number of learning outcomes closely reflect the formulation and number of competences. This reflects the fact that a large amount of provision for this qualification in the UK (England) is enterprise-based, i.e. it takes place in the real-life environment of the occupational standard rather than in a training institution. In the case of the Spanish qualification, there is a considerable contrast between the formulation and number of learning outcomes and the formulation and number of competences. This discrepancy reflects the fact that provision takes place, to a great extent, in a vocational school. The learning outcomes describe what learners should be able to do in a training institution rather than in the workplace.

The English apprenticeship qualification consists of a framework which includes a number of distinct qualifications. Government policy, marketing and funding encourage the achievement of all of the qualifications so that the full framework is achieved. However, in practice, learners and providers may address only some of the qualifications in the framework.

In the UK (England), there is a particular unitised occupational standard which describes the work tasks that fulfil a particular job description, e.g. organise and implement travel and tourism promotional activities. The occupational standard is defined in terms of competences, each of which is then elaborated in terms of performance criteria. For example, the competence 'plan promotional activities' is defined in terms of a set of standards of performance, e.g. P1 the aims, objective and success criteria of the promotional activity are agreed with the relevant person(s). A total of seven performance criteria define the various work functions associated with this competence, e.g. collaborating, resourcing,

etc. These are supplemented by seven statements of what should be known and understood to exercise this competence, sorted into three categories: general, industry-specific and organisation-specific.

The NVQ travel services qualification includes is a unit that corresponds directly to the occupational standard unit. This qualification unit bears the same title but contains five learning outcomes. Three of these outcomes reproduce the competences found in the occupational standard. The other two learning outcomes serve to capture all of the knowledge and understanding statements so that the seven statements of knowledge and understanding in the standard are reproduced as 14 assessment criteria in the qualification document (see Table 17).

There is little substantive difference between the qualification standard and the occupational standard. However, there is one formal difference. In the qualification standard, statements about knowledge and understanding have been translated into distinct learning outcomes, whereas, in the occupational standard, they are presented as knowledge and understanding that support all levels of performance. This translation makes it possible to set separate assessment criteria to assess knowledge and performance – whereas the structure of the occupational standard implies that knowledge and understanding are manifested through other activities.

Further light is shed on the relationship between occupational standards and learning outcomes in the other main qualification which forms part of this English apprenticeship framework, the Edexcel BTEC (Business and Technical Council) level 3 certificate in travel services. This certificate provides the knowledge component of an apprenticeship. It can also be offered separately. In the certificate, the units do not reproduce particular occupational standards, although they have been based on them. For example, Unit 17, arranging business travel, consists of nine learning outcomes, six of which address underpinning understanding, e.g. understand travel services for the business traveller, while four describe capabilities, e.g. be able to arrange accommodation for the business traveller. Each of the nine learning outcomes is elaborated by a set of assessment criteria. The criteria, for the most part, call for the exhibition of knowledge (identify..., describe..., explain...) rather than for the demonstration of skills, though there are a few examples of the latter.

Table 17 **Comparison between the occupational and qualification standards to organise and implement travel and tourism promotional activities in the UK (England)**

Occupational standard	Qualification standard
PPL TT42 Organise and implement travel and tourism promotional activities	NVQ T/601/5785 Organise and implement travel and tourism promotional activities.
<p>Plan promotional activities, so that:</p> <p>P1: the aims, objective and success criteria of the promotional activity are agreed with the relevant person(s)</p> <p>P2: where appropriate, others are encouraged to contribute ideas for the activity</p> <p>P3: all necessary resources for the promotional activity are identified and their availability secured</p> <p>P4: activities are planned to meet the organisation's needs, procedures and legal requirements</p> <p>P5: plans include contingency arrangements to take account of predictable problems</p> <p>P6: plans are presented in a format to suit the needs of all others involved</p> <p>P7: suitable arrangements are made for the evaluation of the promotional activities</p>	<p>Learning outcomes:</p> <ol style="list-style-type: none"> 1. Understand the organisation and implementation of promotional activities 2. Be able to plan promotional activities 3. Be able to implement promotional activities 4. Be able to evaluate and revise promotional activities 5. Know how to organise and implement travel and tourism promotional activities
<p>General knowledge and understanding</p> <p>K1: the roles of promotional activities in the wider context of marketing products and services</p> <p><i>You need to know and understand:</i></p> <p>Industry-specific knowledge and understanding</p> <p>K2: factors affecting the success of promotional activities in travel and tourism</p> <p>K3: legislation and regulation relevant to the activity being planned and undertaken</p> <p><i>You need to know and understand:</i></p> <p>Context-specific knowledge and understanding</p> <p>K4: the promotional needs and procedures of the organisation</p> <p>K5: the features of the travel and tourism products and services to be promoted</p> <p>K6: organisational procedures for sourcing and securing promotional resources</p> <p>K7: the outcomes of previous promotional activities run by the organisation</p>	<p>Assessment criteria:</p> <ol style="list-style-type: none"> 1.1 Explain the roles of promotional activities in the wider context of marketing products and services 1.2 Identify and describe factors affecting the success of promotional activities in travel and tourism 1.3 Summarise legislation and regulation relevant to promotional activities being planned and undertaken 2.1 Agree the aims, objectives and success criteria of promotional activities with the relevant person(s) 2.2 Encourage others to contribute ideas for promotional activities; 2.3 Secure resources for the promotional activities 2.4 Plan activities to meet organisational needs, procedures and legal requirements 2.5 Plan contingency arrangements to take account of predictable problems 2.6 Present plans in a format to suit the needs of all others involved 2.7 Make suitable arrangements for the evaluation of the promotional activities

Source: City and guilds level 3 NVQ certificate in tourism services (4927-34/35). Qualification handbook for centres: visitor services and tour guiding. National occupational standards: <http://nos.ukces.org.uk/Pages/index.aspx>.

The NVQ qualification reflects the functional structure of the occupational standard. That is to say that the learning outcomes recognisably correspond to distinct work tasks or activities. The functional structure is still present in the certificate in travel services. The apprenticeship, comprised of a group of qualification standards, restructures the competences set out in the occupational standard with the following effects:

- (a) knowledge and skills are distributed into separate qualifications (the certificate in travel services and the NVQ in travel services) whose delivery can be distributed between different learning environments and times, e.g. an alternance model of delivery;
- (b) knowledge and skills are distributed into separate descriptors, which are contained in a single unit. This allows knowledge and skills to be taught and assessed separately or in combination – it provides flexibility for the trainer and assessor.

This analysis suggests that the structuring of the qualification has a facilitating effect on the manner of assessment and the practice of teaching and learning. It is possible for knowledge and skills to be taught and assessed together. Although this does happen, the qualification allows knowledge and skills to be taught and assessed separately ⁽⁴³⁾. If the curriculum does not require theoretical and practical elements to be taught and assessed in combination, then where there are practical or institutional reasons for not doing so, these are likely to have a significant impact.

In the case of Spain, the professional profile (the occupational standard) is structured in terms of descriptors of professional performance which, in general, correspond to a functional analysis of occupational roles. Each professional performance is further defined by a set of performance criteria. These provide detailed standards for the performance (see Table 18 showing 12 criteria for the second performance). The professional profile informs the writing of a qualification standard known as the professional module. This does not reproduce the competence descriptors from the professional profile. Instead, the professional module provides a set of generalised capabilities (learning outcomes) which can be developed during training, e.g. in comparison with the professional profile, there is a greater emphasis on understanding rather than performance. The learning outcomes are further defined by a list of assessment criteria that describe training activities that learners should complete. Both the professional profile and the module are granular, but the former offers a detailed

⁽⁴³⁾ In the case study on this curriculum, knowledge and skills learning outcomes were taught together, 'on the job', through enterprise-based training (English case study, travel services).

analysis of performances associated with the work role, while the latter describes a set of detailed performances in a training environment. The fact that the competences are not easily recognisable when they are reformulated as learning outcomes in the professional module obscures the relationship of the learning outcomes to the competences; however, it does provide a high level of clarity and specificity for assessment, and it sets out a menu of training activities which are appropriate for training institutions.

Table 18 **Professional profile and training module, higher technical tourist guide, information and assistance, Spain**

Competence unit: provision of support and assistance to tourists and visitors and design of tourist itineraries	Training module: process guide and tour assistance
Level 3 UC1071 3 code	Equivalence in ECTS credits: 8 Code: 386 Duration: 75 hours
<p>Professional performance (RP) and performance criteria (CR):</p> <p>RP 1: Analyse the guide service and provide support and assistance to tourists and visitors who will be the subject of delivery, proposing, where appropriate, changes and managing the resources required for its implementation so as to ensure compliance with the objectives of the organiser and to meet customer expectations.</p> <p>CR 1.1: Information is interpreted on the profile of the group or tourist route or itinerary, transportation, accommodation, tours, activities and intended suppliers and travel documents.</p> <p>CR 1.2: Information to be provided to the group or to individual tourists is adapted to their specific characteristics.</p> <p>CR 1.3: Degree of adaptation of the services provided to customer requirements and cultural characteristics of the environment, evaluating and proposing, where necessary, alternatives that may improve the travel itinerary or route designed by the organiser.</p> <p>CR 1.4: Means of service provision are determined, taking into account the economic conditions laid down in relation to: information on the characteristics of the group or tourist; information on visits; information intended to be used on the broadcast media provided; means of transport and other service providers such as restaurants and museums; other aspects.</p> <p>CR 1.5: Contact service providers to ensure that conditions, prices and schedule are valid, verifying their appropriateness and relevance to the route determined, making alternative arrangements where necessary and collecting</p>	<p>Learning outcomes and assessment criteria</p> <p>1. Characteristics of the assistance and guidance services are defined so as to analyse the processes derived from these activities. Evaluation criteria:</p> <p>(a) have described ethical principles and ethics of the profession;</p> <p>(b) have described the different types and profiles of the activity of assistance and guidance of tour groups;</p> <p>(c) have recognised the various types of services and functions to be characterised in each case;</p> <p>(d) have defined the characteristics of related aspects of quality and customer service, support services and guidance;</p> <p>(e) have interpreted existing legislation affecting the activity of assistance and guidance;</p> <p>(f) have identified the major professional associations and their functions.</p> <p>2. Itineraries, tours and other services have been designed by analysing information and applying the methodology of each process:</p> <p>(a) components of tourism have been identified in a given geographical area and at a given time;</p> <p>(b) itineraries, routes and visits to tourist attractions have been designed, taking account of the characteristics of the various methods and stages;</p> <p>(c) commercial viability has been justified; itinerary, route or visit has been designed,</p>

<p>information on contact persons and reception of the group on arrival.</p> <p>CR 1.6: Potential situations of conflict are anticipated by agreeing with the organiser the necessary mechanisms to solve them so as to ensure viable alternatives for each of the activities and scheduled services.</p> <p>RP 2: Accompany and assist the tourist or group, making them feel accompanied at all times and entertained when needed.</p> <p>CR 2.12: The basic rules of protocol, customer service and co-existence are in place to maintain an adequate level of performance in the development of the activity.</p>	<p>taking account of technical and, where appropriate, environmental issues;</p> <p>(d) potential difficulties for people with disabilities or special needs have been identified;</p> <p>(e) appropriate strategies to adapt the information to the user profile have been characterised and selected;</p> <p>(f) appropriate guidance on services has been provided.</p>
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Source: Ministry of the Presidency (joint proposal by the Ministry of Education and the Ministry of Labour): Royal Decree 1700/2007 of 14 December 2007, supplementing the national catalogue of professional qualifications. Curriculum of vocational training (autonomous region): Decree 9/2010 of 18 March 2010 establishing the curriculum of higher-level vocational training in the community of Madrid for the occupation of higher technical tourist guide, information and assistance.

ANNEX 6.

Learning outcomes in qualification standards connected to learning outcomes in education standards

In many outcome-oriented curricula, the qualification standard informs the development of an education standard, i.e. a document that defines and disassembles the learning outcomes and provides further educational material. In this example, a qualification standard and an educational standard used in the Hungarian system are analysed to understand how learning outcomes connect these documents together and how the curriculum has been developed.

The Hungarian qualification of travel adviser is not based on an occupational standard. The document forms part of the professional and examination requirements (SZVK) which have the force of legislation. This document, as the name implies, serves to specify both the functional requirements of the travel agent's job and the educational requirements that will be assessed by examination.

The professional and examination requirements for the travel adviser qualification include a list of topics and, for each topic, a holistic learning outcome, known in Hungarian as a *kompenciák*, i.e. a competence. This competence is expressed using an active verb, but it is not expressed in simple terms and it is not broken down into specific work tasks or functions. In the example below, the competence is expressed in fairly general terms: carries out usual bank transactions; deals with accountable forms. This statement can be regarded as both a competence, in that it describes a kind of work, and a learning outcome, in that it describes a consequence of learning that can be assessed⁽⁴⁴⁾.

More detailed learning outcomes are set out in another document, known as the central programme. The central programme restates the holistic learning outcome and develops this with further subordinate learning outcomes; in the example in Box 26, there are eight such outcomes. These statements are expressed using active verbs and, generally – but not always – in simple terms, e.g. 'manages income accounts and reports to programme manager'.

These statements are known as content and they are grouped in units (known in Hungarian as a module – *modulok*). They are supplemented with

⁽⁴⁴⁾ There is no separate occupational standard in the Hungarian system; accordingly, there is no formal separation between competences and learning outcomes.

additional competences: professional, methodological, personal and social. However, these additional requirements are not expressed in statements that have the form of learning outcomes ⁽⁴⁵⁾. The professional competences take the form of a brief indicator of content; the professional skills and the relevant social and personal competences are listed rather than stated in terms of behaviours or capabilities.

In addition, there is guidance about the type and balance of teaching and learning activities, e.g. in relation to the element on bank transactions, it is recommended that learners spend 10% of their time carrying out professional activities in groups with support and 40% of their time performing independent professional tasks under supervision. The document also provides guidance on the hours of practical and theoretical lessons and the location of lessons, e.g. the use of IT rooms. The central programme is intended to guide local VET providers in the development of their local programmes. It does not have the force of law.

The central programme provides some guidance on teaching and learning. However, the professional and examination requirement leaves a considerable amount of discretion to teachers and head teachers in VET institutions who will draw on their own knowledge of practice in the industry and of the associated content in designing and delivering programmes.

In the Hungarian written curriculum, the qualification standard limits itself to generalised competence statements. These are broken down into different types of competence in the curriculum document and developed as a set of learning outcomes which describe in more detail those tasks that learners should learn to carry out. The educational standard has the status of a guidance document and does not prescribe teaching or assessment. In consequence, assessors and teachers in Hungary are currently able to exercise considerable discretion.

⁽⁴⁵⁾ They are not expressed using active verbs.

Box 26 **Travel agent qualification, Hungary, ISCED 4**

Administration module, financial activities unit, in central programme

Teaching material element: bank transaction
element on bank transactions

Task competence: carries out usual bank transactions
deals with accountable forms

Application of professional knowledge:

Type A ⁽⁴⁶⁾: rules and regulations in relation to cash, reduced cash flow and money
transaction without cash, invoicing

Type C: basic legal knowledge

Type B: basic money transaction

Content:

- (a) uses information technology;
- (b) takes care of provisioning;
- (c) manages income accounts and reports to programme manager;
- (d) certifies the cash flow;
- (e) compiles statistics;
- (f) collects payment from the client;
- (g) complies with and enforces health and safety rules;
- (h) carries out normal financial transactions according to regulations.

Personal competences: reliability

Social competences: empathic
well-mannered
polite

Source: National qualification register for protocol and travel agent, ISCED L 4
http://szakkepesites.hu/szakmak/protokoll_es_utazasugyintezo.html.

⁽⁴⁶⁾ Types A to C relate to the standard of competence required.

ANNEX 7.

Learning outcomes in qualification standards connected to learning outcomes in training standards (learning programme)

In the Irish example, there is no distinct occupational standard. As a result, the formulation of the learning outcomes in the FETAC professional cookery common award cannot consist of a translation from a functional analysis of work activities. The professional cookery award consists of an extensive foundational component (unit) called culinary techniques plus other core components which reflect the conventional functional divisions in the cookery industry, e.g. pastry, baking and desserts. The learning outcomes in the units have a generalised form rather than reflecting different functions within a job, e.g. apply the processes and techniques necessary to produce a range of breads, pastries, cakes, etc. The learning outcomes are listed, but they are not classified into different types. However, they can be analysed with reference to knowledge, skills or application (see Table 19). This arrangement of learning outcomes implies a more joined-up delivery, which is also encouraged by the mark-based system of assessment.

This approach is confirmed in the professional cookery traineeship. This is the work-based learning programme (or apprenticeship) developed under the leadership of Fáilte Ireland; it has received endorsement from FETAC as a programme which delivers the award. The learning programme reshapes the culinary techniques unit into three modules for teaching purposes. This reshaping is helpful in terms of the allocation of times, rooms and teachers. It also draws on traditional training practice in relation to professional cookery. Trainers approve of this division of the programme because they believe that the three modules – skills, classical cuisine and larder – are meaningful ways of grouping the learning outcomes – both for themselves and their students.

Table 19 **Comparison between the qualification standard and the training programme in Ireland**

<p>Example: component details</p> <p>Title: culinary techniques</p> <p>Teideal as Gaeilge: <i>Teicníochtaí Cócaireachta</i></p> <p>Award type: minor</p> <p>Code: 5N0630</p> <p>Level: 5</p> <p>Credit value: 30</p> <p>Purpose: the purpose of this award is to equip the learner with the relevant knowledge, skill and competence to produce a range of classical and contemporary dishes, using a wide range of skills in their preparation, under supervision.</p> <p>Learning outcomes: learners will be able to:</p> <ol style="list-style-type: none"> (1) describe how a professional kitchen is typically and optimally organised; (2) explain the role of good personal presentation, positive personal and professional attitudes, time management, work plans and scheduling, organisation and teamwork in the workplace; (3) explain the sensory properties of food, including visual examination, taste, colour, texture and smell; (4) distinguish between the taste of fresh and convenience foods, organic and non-organic foods, mass-produced and artisan foods; (5) describe a range of systems of food production including organic, free-range, battery and artisan foods; (6) explain the physical structure, classification points, quality points and (where applicable) cuts associated with a range of meat, offal, poultry, game, fish and shellfish, vegetables and fruits, dairy, eggs, farinaceous foods, grains, pulses and cereals; (7) describe the process for butchering whole carcasses and smaller cuts of meat; (8) describe the wide range of commercial ethnic cuisines available to the Irish market including key ingredients, basic cooking procedures, specialist equipment and presentation techniques; (9) explain contemporary issues relating to food production; <p>...plus 16 further learning outcomes.</p>	<p>Programme module 1: culinary techniques, culinary skills</p> <p>Programme learning outcomes</p> <p>On successful completion of this module, learners will be able to:</p> <ol style="list-style-type: none"> (1) describe how a professional kitchen is organised and demonstrate an appreciation of the importance of good professional practices. (2) implement best practice in workplace and food safety in line with the Safety, Health and Welfare at Work Act (2005) and the Food Safety Authority of Ireland (FSAI) training standards (level 2) and legislation; (3) use a range of cutting skills required for various types of food preparation, including tomato concasse, mirepoix, classical vegetable cuts and duxelle; (4) prepare a range of classical stocks, soups, glazes and sauces, as well as a variety of extensions; (5) research and apply, from a scientific and practical perspective, cookery processes using a range of commodities and kitchen equipment; (6) explain the sensory properties of food, including visual examination, taste, colour, texture and smell, and be able to distinguish between the taste of fresh and convenience foods, organic and non-organic foods, mass-produced and artisan foods; (7) understand the composition of quality food products and their various production methods, demonstrating awareness of current issues in food production; (8) understand the food control cycle and how the principles of food cost, portion and quality control are implemented in a professional kitchen. <p>Indicative module content</p> <p>Unit 1: The professional kitchen 5%</p> <p>Organisation of a professional modern kitchen, including:</p> <ul style="list-style-type: none"> • design and layout, • use of space, • service, • safety, • work flows, etc.
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Source: National traineeship for professional cookery (Fáilte Ireland) and FETAC common awards in professional cookery: 5M2088 and 6M2099.

The national traineeship in professional cookery places an emphasis on the vocational discipline as opposed to an analysis of the tasks corresponding to a particular typical cookery job. Trainers value this approach because they want to be able to pass on a range of skills and broad understanding and knowledge. They believe that the traineeship should support this broader capability rather than matching exactly the more limited job roles that some of the trainees currently fulfil. Assessment, in the professional cookery traineeship, is driven not by assessment criteria but by a marking system which is weighted in relation to an extensive listing of content. This way of setting out the qualification standard and the training programme empowers the trainer: it is the trainer who selects content and determines the composition of the portfolio of student work that is marked. The units in the qualification standard and the corresponding modules in the training programme combine knowledge, skills and understanding so that they may be taught and assessed in a holistic rather than a fragmented manner.

ANNEX 8.

Learning outcomes in curricula connected to assessment criteria

One of the functions of learning outcomes is to help generate statements about the results of learning that will count as evidence for the purposes of assessment. This is a very important function in some curricula but not all. For example, it is very important in the *baccalauréat professionnel des systèmes électroniques et numériques* and the English NVQ, but it is less important in the Irish professional cookery standard and the German mechatronics written curricula.

There are different ways in which the learning outcomes can be articulated with the assessment requirements. Some qualifications and curricula speak of the results of learning (e.g. France), others of assessment or evaluation criteria, and others of performance criteria. Furthermore, we sometimes find that both learning outcomes and evaluation criteria are expressed in a holistic and generalised fashion (e.g. in mechatronics in the Netherlands), while, in other curricula, learning outcomes are set out in simple and specific (i.e. granular) language. In the English NVQ, learning outcomes are matched in a one-to-one relationship with assessment criteria – a relatively unusual arrangement. Another possibility is where the learning outcomes are stated in a relatively general manner, but where they are further specified by means of a larger number of assessment criteria, as in France. In Finland, the assessment targets act as the learning outcomes. Indeed, the introduction of detailed and mandatory assessment criteria is part of an explicit policy to give existing learning outcomes a genuine bite within local curricula.

However, the manner in which teachers interpret learning outcomes can be affected by their expectations with regard to assessment. Although, in principle, learning outcomes might be highly granular, assessment methods might be relatively holistic; this would encourage teachers to adopt learner-centred rather than traditional transmission pedagogies. There is some evidence that this is happening with the Slovenian programme for tourism and gastronomy (see Table 20).

The Slovenian gastronomy and tourism standard is part of a broad upper-secondary school curriculum. The unit on business communication sets out just six vocational competences which are drawn from occupational standards for gastronomy and tourism. These learning outcomes are developed by means of an extensive list of informative and formative goals. The informative goals consist

of a list of 17 knowledge requirements, while the formative goals form a list of 28 skills. The unit on business communication consists of only nine learning outcomes (known as competences) – six derived from business communication and three from IT. These are further specified in terms of 81 subordinate learning outcomes. Together, these make up a highly granular and prescriptive description of student performances that are deemed to evidence the six high-level learning outcomes. The unit has duration of 133 hours. This amounts to 0.6 sublearning outcomes per hour (see Table 20).

Although the Slovenian curriculum is highly prescriptive and highly granular, its introduction has been combined with reforms of the assessment system. This has increased the amount of oral and project-based assessment. These methods of assessment, which make it possible to assess more than one learning outcome together, have proved popular with students. Project work, in particular, encourages pedagogy where learning outcomes are assembled together in relation to a meaningful and practical activity. Evidence from this research suggests that some but not all teachers of this programme are confident about responding to the new curriculum in this way.

Table 20 **Unit in business communication, from the gastronomy and tourism curriculum, Slovenia (2007)**

Vocational competences: <ul style="list-style-type: none"> • communicates in a business situation; • addresses individuals as equals; • does public speaking and presentations; • organises and leads teamwork; • uses professional terminology in chosen foreign language; • presents him/herself with professional portfolio. 	
<i>Informativni cilji (informative goals)</i>	<i>Formativni cilji (formative goals)</i>
<p>Differentiate between personal characteristics</p> <p>Know the rules of business ethics and business etiquette and act in accordance with honest practices</p> <p>List the factors that influence personality</p> <p>Describe and understand the various groups of guests, their needs and habits</p> <p>Know the general etiquette</p> <p>Learn about different ways of communication</p> <p>Distinguish and understand verbal and non-verbal communication</p> <p>Understand business communication</p> <p>Be familiar with a written offer in the hospitality industry</p> <p>Evaluate effects of different promotional approaches</p> <p>Know and distinguish the basic elements of acting</p> <p>Know and understand the various target groups</p> <p>Understand the importance of external regulation Distinguish different modes of presentation</p> <p>Learn about the place of presentation (greeting, introduction, core, end, question)</p> <p>Know and understand the various elements of work organisation (become familiar with the concept of work, working groups, labour organisations)</p> <p>Understand the importance of organising their own work</p> <p>Know different ways to organise their own work and to organise and manage staff</p> <p>Have insight into the requirements of professional appearance</p> <p>Be able to make sense of their professional decisions</p> <p>Distinguish between wishes, values and goals of their personal and professional life</p>	<p>The student:</p> <ul style="list-style-type: none"> • presents his/her own personal characteristics; • practices different behaviour in business; • communicates in accordance with business ethics and honest practices; • plays the role of guest and seller in a hospitality and tourism business and observes business etiquette; acts in accordance with honest practices; • carries out work in accordance with the general mode of communication adapted to different target groups; • communicates orally and in writing for business; • communicates non-verbally, plans and carries out business meetings, reacts appropriately to problems and situations of conflict; • uses appropriate promotional approach to dealing with potential guests; • is active in various business situations; • mode of communication is adapted to different target groups; • is suitably attired to attend to guests (dress, appearance); • has appropriate appearance, presentation style and body language; • performs a variety of presentation methods and uses knowledge acquired in a specific situation; • uses systematic planning: a working day, week, project; • develops collaboration among colleagues to achieve accuracy, consistency and reliability; • gives work instructions to others, develops and structures his/her work hours; • develops and practices management skills;

Learn about their own personality Evaluate the strength of evidence Revise opinions Know various means of obtaining information	<ul style="list-style-type: none"> • develops a personal portfolio; • writes his/her own CV and a vision of his/her professional development; • draws up an action plan; • participates in workshops (individually, in pairs and in teams); • argues with the help of SWOT, pros and cons and other methods; • develops ways of solving conflict situations; • collects, distributes and evaluates evidence (certificates, receipts, pictures, film).
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Source: MoES. *Izobraževalni program – gastronomija in turizem* (curriculum – gastronomy and tourism).

A contrasting example is provided by the case study on a tourism qualification in Finland. Finnish vocational qualifications have recently been revised so that the national qualification requirements (the qualification standard) has become more holistic (granularity is estimated at one learning outcome per 20 hours). However, authority to set the assessment criteria has shifted from schools to a national development group set up by the national education board. The focus of assessment has shifted towards the demonstration of skills, and the assessment criteria have become more granular. They now set out relatively specific requirements which are more closely associated with work competences and connect better with the enterprise-based component of the programme. Skills demonstrations have become relatively frequent and have come to have a structuring effect on the way that programmes are sequenced and planned. This example shows us that there is more than one way of achieving the benefits associated with granularity: consistency, strong orientation towards competences and clarity. Curriculum designers may choose between the granularity of learning outcomes and that of the assessment criteria, and, as in the case of the Finnish reforms, they may seek to achieve both consistency and flexibility by increasing the granularity of one and decreasing the granularity of the other at the same time.

ANNEX 9.

Learning outcomes in curricula connected to content

Content plays an important role in many outcome-oriented curricula. Sometimes, its importance is concealed where there is little mention of content in the qualification standard but content is set out in detail in the education standard. However, in many cases, the content is set out in the qualification document alongside the learning outcomes. Content can include references to industrial processes, scientific knowledge, work tasks and process knowledge. This kind of mapping serves as a 'pocket translator' for teachers who are used to teaching content but are required by outcome-oriented curricula to think in terms of learning outcomes. The description of content will be less explicit than the learning outcomes to a non-specialist. However, many teachers interviewed found it more natural (that is, more consistent with past practice) to organise their teaching in terms of content rather than in terms of learning outcomes.

In the Croatian case, the learning outcomes are defined by reference to topics and content. The Croatian qualification in electrical engineering (*Elektrotehnika*) is divided into courses which are defined in terms of learning outcomes. For example, the course on the fundamentals of electrical engineering consists of five learning outcomes (see Table 21).

The learning outcomes in each course are defined by a very long list of content or teaching topics. Teachers will be guided both by the learning outcomes and by the content. Research into teaching practice in Croatia suggests that a great deal of teaching remains teacher-centred, with a focus on the transmission of knowledge. This didactic approach is partly to be explained by the training that teachers receive and the teaching spaces and resources that they have at their disposal. However, the way that the curriculum is written allows such an interpretation because of the dominant place of content in the written curriculum.

Table 21 Content in the electrical engineering curriculum, Croatia

Name of the module	Electrical engineering – Croatia
Name of the course in the first year	Fundamentals of electrical engineering First year, four hours/week.
Through this course, in the first year of study, students will gain the following learning outcomes	Apply the basic laws of electrical engineering to simple electrical circuits. Apply the dimensions of simple circuits to real applications. Select and combine appropriate elements according to the existing scheme. Measure the electrical size of the corresponding elements of the circuit. Develop a wiring diagram.
Elaboration	
Teaching units	Elaboration – teaching topics
Introduction to electrical engineering	Electrical base material structure Electrical voltage and electric current Electrical resistance (conductor resistance, the temperature dependence of resistance) Ohm's law
Direct current circuits	Etc.

Source: Agency for vocational education and education for adults, Croatia, 2011. Qualification standard for mechatronics technician.

It is not uncommon for statements of learning outcomes to map the learning outcomes against the traditional content of the vocational curriculum (see Table 22). This mapping helps teachers to understand the relationship between learning outcomes and traditional curricula, and it also points to connections between learning outcomes and the kinds of teaching and learning activities and materials that teachers will use. However, it falls to teachers to decide how to interpret these two alternatives, whether, for example, they organise teaching and learning to achieve the learning outcomes or whether they focus on delivering traditional content, organised by topic, in the belief that this will address the learning outcomes.

Table 22 **Learning outcomes matched against content, engineering technology, Czech Republic**

Learning outcomes	Curriculum (content)
Students will: <ul style="list-style-type: none"> explain the primary tasks and obligations of the organisation when ensuring OHS (occupational health and safety); justify the role of professional state supervision of work safety; observe the provisions concerning occupational health and safety, and fire prevention; specify the basic safety requirements for work with machinery and equipment at a worksite, and ensure compliance therewith; during the operation, regular maintenance and cleaning of machinery, proceed in accordance with the regulations and work procedures; give examples of safety risks, possibly also the most frequent causes of injury and their prevention; provide first aid in case of an injury at a workplace; describe the duties of the employee and employer in case of an industrial accident; 	1. Occupational health and safety, work hygiene, fire prevention: <ul style="list-style-type: none"> management of work safety within an organisation and at a worksite, labour-law aspects of the OHS, safety of technological equipment.
<ul style="list-style-type: none"> design types of intermediate products for the production of components; design the shape and dimensions of non-standardised intermediate products; complete diagrams as an inspiration for their construction; determine the types and dimensions of normalised intermediate products for the production of engineering components, tools, etc.; design the technology and conditions for welding simple parts; 	2. Intermediate and prefabricated products: <ul style="list-style-type: none"> metallurgy, foundry work, metallurgical forming, forging, welding.
<ul style="list-style-type: none"> specify the division of machining operations into individual sections and operations; select appropriate machinery for each operation; select the required communal tools, instruments, measuring instruments and other production tools; propose the use of operating tools, instruments, measuring instruments and other production tools for individual operations; for various operations, specify the size of additions for further machining or processing; specify the technological conditions and parameters of execution of various operations. 	6. Machine working, machine tools and instruments: <ul style="list-style-type: none"> theory of working/machining, manual working, chip machining using conventional machinery, chip machining using numerically controlled machinery, fine machining, physical and chemical machining methods, machining automation, industrial robots and manipulators and the possibilities of their deployment, instruments, tools and preparations.

Source: Ministry of Education, Youth and Sports, 2007. Framework educational programme for the field of study of mechanical engineering.



CEDEFOP

European Centre for the Development
of Vocational Training

Curriculum reform in Europe

The impact of learning outcomes

Luxembourg:
Publications Office of the European Union

2012 – VI, 200 p. – 21 x 29.7 cm

ISBN 978-92-896-1153-4
ISSN 1831-5860
doi: 10.2801/13194
Cat. No: TI-BC-12-010-EN-N

Free download at:
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Curriculum reform in Europe

The impact of learning outcomes

This Cedefop comparative study discusses curriculum reforms geared towards learning outcomes in 32 European countries participating in the Education and Training 2020 process. Based on an extensive literature review, visits and interviews conducted with various stakeholders in curriculum policy-making and practice, this study provides insight into two specific sectors: tourism and electronics.

The findings show how national policies that seek to raise VET attractiveness and improve competitiveness through skills development, along with European policies and tools for transparency, have intensified curriculum reform over the past decade in Europe. Learning outcomes provide the foundation for curriculum design in all European countries, although significant differences are to be found in the approaches adopted. National variations with respect to the conceptualisation of competence and learning outcomes are one of the factors that may explain such differences.

Based on an analysis of the relationship between written and taught curriculum, the study's findings indicate that the way learning outcomes are defined and grouped and the way they connect to other material in the curriculum, may have implications for teaching and learners' assessment. This study discusses these implications and proposes key policy messages for effective curriculum design processes and curriculum delivery that may benefit learners.

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