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Highlights on Cedefop's study "Exploring the relationship between learning outcomes and VET curricula and learning programmes"

This draft working paper[1] has been prepared by Irene Psifidou, Cedefop project manager, to serve as background information in Cedefop's Workshop: **Curriculum innovation and reform: policies and practices, 9-10 November 2009, in Thessaloniki**. It summarises the main scope of Cedefop's ongoing study on "Exploring the relationship between learning outcomes and VET curricula and learning programmes"[2] and discusses preliminary findings. As the study is still ongoing, these findings should by no means be taken as final conclusions and they might change as the research progresses. This paper however should initiate reflection and discussion among participants during the above mentioned workshop.

[1] Cedefop working papers are unedited documents, available only electronically. They make results of Cedefop's work promptly available and encourage further discussion. This is a first draft and a slightly amended version may follow.

1. Background to the study

A shift to learning outcomes or a competence-based approach in VET systems of European countries has been widely acknowledged as a policy priority and practice in Cedefop's recent research work undertaken during 2008-09[3]. The increasing use of learning outcomes approaches - defined as *"statements of what a learner knows, understands and is able to do on completion of a learning process"*[4] - in vocational education and training policy to design qualifications and job profiles, to set standards and to orient quality assurance and certification approaches is progressively becoming a universal approach in the European arena. There is evidence that countries' commitment to refer national qualifications to the European Qualification Framework 8-level structure based on learning outcomes has boosted these developments[5].

If qualifications are to be awarded on the basis of learning outcomes, this must affect the various sectors of education and training by 'backwash' - do curricula lead learners to the required outcomes? Do the teaching and other learner support resources assist learners in achieving the defined outcomes? These issues are already having effects on the design and delivery of many higher education programmes. VET needs to react urgently to the emerging situation.

Key European policy documents highlight the importance of curriculum reform and renewal as an important component for modernising education and training systems, and call for increased cooperation between member states to achieve this goal. The Council conclusions on "Improving the quality of teacher education" (2007) urge the need for the development of more student-centred approaches to teaching, implicating competence-based curricula and learning programmes. The Commission's Communication "Improving Competences for the 21st Century: An Agenda for European Cooperation on Schools" (2008) identifies the modernisation of curricula as the first area for cooperation to make school systems more relevant to the knowledge-based Europe of the future. The Bordeaux Communiqué on Enhanced European cooperation in Vocational education and Training (2008) established four priority areas to all of which the work on curriculum and pedagogies while often implicit is highly associated. More recently, the Council conclusions (2009) on a strategic framework for European cooperation in education and training in the period up to 2020 ("ET 2020"), establish as a strategic objective "to take greater account of transversal key competences in curricula, assessment and qualifications" in accordance with the December 2006 Recommendation of the European Parliament and of the Council on key competences for lifelong learning.

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[2] External contractors for this study are BRIDGES Politik- und Organisationsberatung GmbH and the Department of Vocational Education and Human Resource Development at the Magdeburg University. Cedefop contract: AO/ECVL/LZAH/Learning outcomes/012/08.

[3] Cedefop. 2009a: The shift to learning outcomes: policies and practices in Europe. http://www.cedefop.europa.eu/etv/Upload/Information_resources/Bookshop/525/3054_en.pdf
Cedefop. 2009b: The dynamics of qualifications: defining and renewing occupational and educational standards http://www.cedefop.europa.eu/etv/Information_resources/Bookshop/publication_details.asp?pub_id=556
Cedefop. 2009c: The relationship between quality assurance and VET certification in EU Member States http://www.cedefop.europa.eu/etv/Information_resources/Bookshop/publication_details.asp?pub_id=555

[4] European Parliament/Council. 2008. Recommendation of the European Parliament and of the Council 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning. In *Official Journal of the European Union*, *C 111, 6.5.2008, p. 1-7*. http://ec.europa.eu/education/policies/educ/eqf/eqf08_en.pdf

[5] Cedefop. 2009d: Continuity, consolidation and change: Towards a European era of vocational education and training http://www.cedefop.europa.eu/etv/Upload/Information_resources/Bookshop/528/3055_en.pdf

Whereas the use of competence-based approaches is very much encouraged and documented at EU level in school education[6], (for instance important developments on key competences), literature on the use of learning outcome approaches on curricula and learning programmes in vocational education and training was found to be scarce and mainly rooted in national contexts. The absence of a European-wide, trans-national research on this field was the reason behind launching in January 2009 a comparative study exploring the relationship between learning outcomes and VET curricula and learning programmes.

2. Research questions and methodological design

The study is based on the assumption that given this increasing importance attributed to learning outcomes approaches at different levels of VET systems, one may expect to find similar developments in curricula and learning programmes. Developments in this direction might either be due to the internal dynamic of the system (national tradition on competence-based education provision) or might go beyond the national context, influenced by EU developments; in either of these cases the motivation behind is often cited to be the development of learner-centre systems. The use of learning outcomes contributes in making systems more learner-centred in the sense that systems are demand-driven and that education and training practices focus on learner's needs.

The recognition of new forms of learning implied by the notion of learning outcomes raise the question of the consequences of this process on learning and teaching. A hypothesis is that those countries which use learning outcomes approaches in curricula and learning programmes increase the opportunities for creating or promoting learner-centre systems. While this is very difficult to be examined requiring systematic *in situs* research on the teaching methods used in classroom and goes beyond the potential of this study, this assumption will be used as a central axon for critically interpreting the findings.

A research framework was designed focused on the following questions:

1) *To what extent have learning outcomes approaches been developed or used to redefine curricula and learning programmes? What methods have been used?*

   On the basis of these questions, we examined the motivations, the extent, the strategy and the perspectives of curriculum reforms of the last decades, focusing particularly on the introduction and implications of learning outcomes in curricula at national level. These questions also raise the issue of the role of curricula as a policy instrument for steering VET systems, leading to the question whether the understanding of a curriculum (what should it contain, who should define it?) has been changing in relation with the shift to learning outcomes.

2) *Which are the implications of the learning outcomes approaches for curriculum design? Which are the consequences to the definition of learning objectives, the content, the methods, the material used and the teachers and trainers arrangements?*

   These questions point to the consequences of using learning outcomes on other elements of the curriculum. What are the methods used for defining learning outcomes? What does an outcome-oriented approach of curriculum design imply for the definition of contents, the place and duration of learning, the teaching and learning

[6]Jean Gordon, Gabor Halasz, Magdalena Krawczyk, Tom Leney, Alain Michel, David Pepper, Elzbieta Putkiewicz, Jerzy Wiśniewski. 2009 forthcoming. *Key competences in Europe: opening doors for Lifelong learners across the school Curriculum and teacher education*. CASE/European Commission.

methods, assessment methods, the teaching materials etc.? And how are teachers prepared to implement the new curricula?

3) *Which are the implications of the learning outcomes approaches for the learning programmes? What are the consequences for the achievement of the education and training objectives?*

   Curricula need to be adapted to the particular needs of learners. This is the role of training providers and teachers and trainers. How do they translate curricula into learning programmes?

4) On the basis of the information collected through the above-mentioned questions, the initial hypothesis is being discussed trying *to identify to what extent the learning outcomes approaches have been used for making systems more learner-centred.*

   Two aspects for a system to be called learner-centred can be distinguished: the institutional aspect and the pedagogical-didactical aspect.

   The institutional aspect includes features of a demand-driven system[7]: modularised curricula allowing learners to choose from a set of modules those which are best suited to their needs and preferences; adaptable workload to learners' needs (full-time and part-time training for instance); personalised learning pathways allowing for vertical and horizontal mobility; recognition of prior learning, be it formal, informal or non-formal, for the award of qualifications and in provisions concerning entry requirements to training programmes; possibility for qualifications or partial qualifications on different levels; high degree of autonomy to teachers and trainers - respectively schools and companies - to plan learning activities and define learning arrangements according to the learners' needs.

   The pedagogical-didactical aspect of learner-centred systems is defined in contrast to "teacher-centred" or "traditional" approaches to education and training and can be characterized as an approach encouraging active engagement of learners in the learning process. It refers to practices based on cognitivist and constructivist learning theories.

To address the research questions, the study is structured around a set of case studies providing empirical materials for a comparative analysis. Nine countries are examined according to geopolitical criteria and to their type of VET system: France, Germany, Ireland, Netherlands, Poland, Romania[8], Slovenia, Spain, UK (Scotland) and, within each country, one particular learning programme in initial VET, in the sector of Logistics[9]. In addition, study visits were organised in two vocational schools in Germany and the Netherlands offering studies in Logistics.

While the project is focused on vocational education and training, general and higher education are also taken into account to identify the specific challenges, similarities and differences between the subsystems of education systems with regard to learning outcomes in curricula. The country reports and the case studies address initial VET, focusing especially on the training paths with the most students. Continuous VET is examined where it is regulated by the State in a way allowing general remarks about the implementation of learning outcomes.

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[7] Grollmann, P., & Rauner, F. (Eds.). 2005. *Europäisierung der Beruflichen Bildung.* Bielefeld: Bertelsmann.

[8] Romania was the object of complementary studies as one of the newest member states but no case study was conducted on Logistics curricula in that country.

[9] Logistics is a growing sector in Europe, with logistics jobs (excluding transport and support jobs) representing approximately 2-2.5 % of overall employment. *Logistic training database:* http://www.novalog-project.org/english/database/ *[cited 19.09.2009]*

3. Conceptual framework: defining "curriculum" and "learning outcomes"

The notion of curriculum is hardly new, but the way we understand and theorize it has altered over years – and there remains considerable dispute as to meaning. Its understanding became broader as it is increasingly changing from a static document indicating the subject knowledge to be acquired at the completion of an academic year, towards a dynamic comprehensive framework embracing occupational standards and defining learning outcomes, assessment procedures and teaching and training methods. This evolution explains why today there is little agreement on where curriculum matters end and the rest of education, learning and training begin.

However, despite this divergence on its understanding and use reflecting national traditions and cultures as well as international developments, there is a broad consensus on its significant importance to ensure quality and relevance of education and training provision. Curriculum relevance is a condition not only for improving the potential of human capital but also for attracting and retaining learners in education and training.

In absence of an agreed definition of the terms "curriculum" and "learning programme"[10], the present study defines them in such a way that the former refers to the design, organisation and planning of learning activities whereas the former refers to the implementation of these activities, reflecting the whole process of curriculum development, implementation and finally delivery in classroom.

In concrete, "curriculum" is defined as "*the inventory of activities implemented to design, organise and plan an education or training action, including the definition of learning objectives, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers*"[11]; while learning programmes are "*an inventory of activities, content and/or methods implemented to achieve education or training objectives (acquiring knowledge, skills and/or competences), organised in a logical sequence over a specified period of time*".

Taking these broad definitions as a basis, the following working definitions were developed for the comparative purposes of this research: "*A curriculum is a normative document (or a collection of documents) setting the framework for planning learning experiences. Depending on the country, the type of education and training, and the institution, curricula may define among other learning outcomes, objectives, contents, place and duration of learning, teaching and assessment methods to a greater or to a lesser extent. 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*".

The definition of curriculum used in this research project must be distinguished from the use of the term made in certain countries, where "curriculum" may be used in the title of some documents (for instance "a Curriculum for Excellence" in Scotland). Indeed, normative documents providing information for planning learning experiences may as well include national qualification frameworks, laws on the education and training system, qualification standards and award specifications, so-called curriculum guidelines, recommendations from the Ministry of Education, etc.

[10] Psifidou, I. 2007. *International Trends and Implementation Challenges of Secondary Education Curriculum Policy: The Case of Bulgaria*. Doctoral Thesis. Universidad Autónoma de Barcelona, Spain.

[11] This definition is adapted from Landsheere G. de, *Dictionnaire de l'évaluation et de la recherche en éducation*, PUF, Paris, 1979. In the Glossary of Cedefop (2004), following definition of curriculum is given : "A set of actions followed when setting up a training course: it includes defining training goals, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers".

As far as regards how "learning outcomes" are being defined, the diversity of use and understandings of the term across Europe, attested for instance by Winterton[12] and Cedefop[13] made it necessary to use the EQF definition as a starting point to compare the specific features of learning outcomes at national level in the framework of the country studies. 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*". Being purely descriptive, this definition is useful in a comparative perspective for it allows the inclusion of a broad range of phenomena at national levels. In particular, this definition lets open the questions of the theoretical foundation, the function, and the operationalization of learning outcomes in curricula, important issues that the present study will address revealing converges and divergences in the understanding of learning outcomes by the examined countries.

4. Preliminary findings[14]

4.1 Current trends in curriculum reforms

Empirical researches show that all nine countries examined in this project are or have been recently engaged in curriculum reforms in VET emphasizing the role of learning outcomes in curricula. The scope and the timing of these reforms varies depending on the country, with some countries having started already in the 1980s to introduce learning outcomes and competences in their curricula (France, UK) whereas others have just started in the wake of European developments and in relation with qualification frameworks, credit systems and the validation of informal and non-formal learning (Poland, Romania).

Following Braslavsky[15], two trends can be identified in curriculum reforms across Europe:

The first trend is the "enrichment" of curricula, meaning that the number of parameters addressed by curricula is increasing. Whereas curricula traditionally tended to be understood as being the same as syllabi, reflecting in an objective way the body of knowledge to be transmitted, they are now increasingly perceived as policy instruments setting the framework for the various stakeholders of education and training processes, including not only teachers and learners, but the society as a whole. Such an understanding of curriculum is particularly well illustrated by the Scottish Curriculum for Excellence: "*The curriculum reflects what we value as a nation and what we seek for our young people. It is designed to convey knowledge which is considered to be important and to promote the development of values, understanding and capabilities. It is concerned both with what is to be learned and how it is taught. It should enable all of the young people of Scotland to flourish as individuals, reach high levels of achievement, and make valuable contributions to society. The curriculum affects us all*"[16].

Accordingly, recent curriculum reforms have been accompanied in a number of countries by large consultations and debates on the values and overarching goals of education and training (for instance in Ireland, Scotland, France, Germany, the Netherlands). Curricula in these

[12] Winterton, J.; Delamare-Le Deist, F.; Stringfellow, E. 2006: *Typology of knowledge, skills and competences. Clarification of the concept and prototype*. Luxembourg: Office for Official Publ. of the Europ. Communities.
[13] Cedefop 2009a see footnote 2.
[14] See introductory note.
[15] Braslavsky, Cecilia. 2001. Tendences mondiales et développement des curricula. Presentation held at the AFEC conference "L'éducation dans tous ses états - influences européennes et internationales sur les politiques nationales d'éducation et de formation", Brussels, 9-12 May 2001.
[16] Scottish Executive. 2004. *A Curriculum for Excellence*. The Curriculum Review Group. Scottish Executive. Edinburgh. P.9.

countries are based on a "vision of the learner" (Ireland) or a definition of the competent professional (Germany) which addresses multiple dimensions of the individual's life (professional as well as social, cultural and political) by formulating learning outcomes in a holistic way. In order to facilitate implementation of these outcomes, guiding principles on teaching and assessment, as well as concrete examples or "best practices" are provided in the curricula and accompanying materials.

A second trend concerns the increased flexibility of curricula and the use of learning outcomes as instruments for organizing individualised learning pathways. This flexibility is for instance expressed in the trend towards modularisation of curricula, in the autonomy granted to teachers when it comes to methods and teaching materials, or in the opening up of different pathways leading to the same qualification (for instance a school-based and an apprenticeship system in the Netherlands). It has further led to the introduction of a distinction between core curriculum and school curriculum or learning programme in a range of countries, with a possibility for training providers to define parts of the curriculum according to local needs (Slovenia, Poland, Spain, Scotland and Ireland). In this context, new curricula focused on outcomes stand for a new approach to public management contrasting with the former regulation of learning processes via inputs (such as content, duration and methods of teaching). The objectives of this approach are, among others, to make systems more learner-centred and to enhance the quality of VET.

These two trends can be observed to different degrees in all countries under scrutiny. However, differences remain concerning the balance between input and outcomes and between the understandings of learning outcomes. These differences can be traced back, at least partly, to the aims of curriculum reforms in the particular national context and with the underpinning theories on learning.

4.2 Rationale for the use of learning outcomes in VET curricula

Linking VET and labour market requirements is a strong motivation for curriculum reforms and the introduction of learning outcomes in the majority of countries. As shown in Cedefop's recent study on occupational and educational standards[17], the use of learning outcomes based on occupational standards is a powerful instrument to link more closely curricula and employment requirements. On the basis of such a motivation and in the context of a behavioural understanding of learning, learning outcomes might be formulated in a narrow sense, taking the form of performance standards mirroring exactly the requirements of the work place as was the case of Scottish Vocational Qualifications before they were embedded in a Curriculum for Excellence. In this sense, learning outcomes can be seen as putting constraints to learning processes which are incompatible with learner-centred approaches.

Paired with a constructivist approach to learning, the introduction of learning outcomes does not lead to less attention towards input dimensions such as contents, learning arrangements and teaching methods. On the contrary, we can observe an increasing importance granted to these aspects in most curricula, resulting in the publication of detailed guidance materials for teachers and trainers. Depending on national traditions, changes in teaching methods are rather initiated via support and projects based on local initiative and voluntary engagement (for instance programs such as "Determined to Succeed or Assessment is for Learning" in Scotland), or via regulations and the introduction of compulsory learning arrangements in the

[17] Cedefop 2009b, see footnote 2.

curriculum (for instance the multidisciplinary project with professional character in France, the "*Projet pluridisciplinaire à caractère professionnel"*).

In countries with a strong national tradition in VET, such as Germany, the Netherlands or France, curriculum reforms are preceded and accompanied by an intense reflection on learning. This theoretical background has a more or less direct impact on curricula, although other factors might interfere. In France, the debates about the concept of "competence" have led to a consensus about several dimensions of competence which should impact on curricula and to which, indeed, some features of IVET curricula can be linked. These dimensions are[18]:

- transversality: competences are not bound to one specific academic discipline and they concern various situations;
- contextualisation/decontextualisation: competences must be developed and evaluated in situations as close as possible to real life;
- complexity: tasks and situations requiring competences are increasingly complex, requiring individuals to use different resources, such as knowledge, know-how, abilities, attitudes, etc.;
- integration: competences integrate various disciplines and aspects (abilities, attitudes, knowledge).

These aspects can be related for instance to the strong link established in curricula between the professional profile, described in terms of functions and activities, competence standards and associated knowledge. The contextualisation and decontextualisation of knowledge and skills is achieved for instance by transdisciplinary projects, periods of work-based learning and new methods of formative assessment.

In Germany, the concept of "*Handlungsorientierung*" (action orientation) has resulted in the introduction of "*Lernfelder"* (learning areas) in curricula for the school-based part of the dual system. Paired with the concept of "*Berufsprinzip*" (vocation), the formulation of outcomes as overarching goals of VET has not led to the introduction of measurable learning outcome standards in curricula, but it has resulted in a strong orientation of input specifications on work processes.

In countries where researches in education sciences are not so deeply rooted in the academic landscape, such as Poland or Romania, a strong incentive for the introduction of curriculum reforms has been the membership in the European Union. Through the financing of reform programs (Phare, ESF and Leonardo da Vinci), experts familiar with EU policy developments in the field of VET have exerted some influence on the shape of new curricula and curriculum development methods. Accordingly, the support for the EQF definition of learning outcomes and the commitment to instruments such as ECVET and the validation of informal and non-formal learning is in some respects higher than in countries with a longer membership such as Germany. A gap has been created however between policy documents and actual curricula, as reforms are still underway and implementation is lagging behind for structural reasons (for instance in Poland, modularised and traditional curricula exist in parallel for the same qualification).

[18] Houchot, A., Robine, F.2007: *Les livrets de compétences : nouveaux outils pour l'évaluation des acquis. Rapport à monsieur le ministre de l'Éducation nationale*. Rapport - n° 2007- 048. Inspection générale de l'éducation nationale. Paris.

4.3 Different functions and operationalizations of learning outcomes in VET curricula

The comparative analysis of the nine country studies reveals that all of them have introduced learning outcomes in VET curricula, but that important divergences concerning the definition, the function and the operationalization exist.

In the countries examined in this study, three categories of learning outcomes were identified depending on the function they are ascribed in curricula, defining either the overarching goals of education and training, the learning outcomes of a study program or the learning outcomes of specific units of training.

In some countries, learning outcomes are used in curricula to express the overarching goals of education and training. In this case, they are formulated in broad terms, neither occupation nor subject-specific. A prominent example of such kind of learning outcomes in VET is offered by Germany, with the concept of vocational competence ("*Berufliche Handlungsfähigkeit*" and "*Handlungskompetenz*"). These terms express a holistic understanding of competence in VET. They can be defined as an integrated capacity based on knowledge, skills, capabilities and experience to solve complex demands in work, learning, personal and societal situations. Vocational competence is predominantly described as a cluster of technical, methodical, social and personal dimensions integrating learning and methodological competences[19]. Based on the concept of complete action, it includes autonomous planning, performing, evaluating and reflecting of occupational actions. The introduction of the concept of vocational competence has led to new forms of teaching/training and assessment.

A similar function is fulfilled by the learning outcomes associated to the "four capacities" (as successful learners, responsible citizens, confident individuals and effective contributors) included in the "Curriculum for Excellence" in Scotland. Contrary to the vocational competence in Germany, which has been developed for VET curricula only, the "four capacities" in the "Curriculum for Excellence" are directed at all segments of education for the age-group from 3 to 18 years old, including general and pre-vocational education as well as further education. Finally, key competences can also be considered to fall into this category of learning outcomes, as they are defined to orient learning regardless of the segment of education or occupational sector. Among the countries studied in this project, five have explicitly adopted a set of key competences: Scotland, Ireland, France, Poland and Slovenia. Although they are primarily developed for compulsory education, key competences are also relevant to IVET (France, Slovenia), or even to CVET in the case of Scotland and Ireland.

A second function of learning outcomes in curricula is, in some countries, to define the specific competences, skills and knowledge to be reached at the end of a study programme. This function is typically fulfilled by learning outcomes expressed in qualification standards. These standards provide the basis for final assessment and for the planning and implementation of teaching and training actions.

In Ireland for instance, this type of learning outcomes are to be found in "general standards" (level descriptors of the qualification framework) and in "award-specific standards". Learning outcomes expressed in standards are formulated as "knowledge, skills and competences" with an explicit reference to the definitions adopted in the EQF. Competence is defined by the National Qualification Authority of Ireland (NQAI) as the practical application of knowledge and skill: "*Competence is the effective and creative demonstration and deployment of knowledge and skill in human situations. Such situations could comprise general social and civic ones, as well as specific occupational ones. Competence draws on attitudes, emotions, values and sense of self-efficacy of the learner, as well as on declarative and procedural*

[19] Bader, R.,Müller, M. 2002. Leitziel der Berufsbildung: Handlungskompetenz: Anregungen zur Ausdifferenzierung des Begriffs. In: *Die berufsbildende Schule*, Vol. 54, N° 6, p.176-182.

knowledge"[20]. The NQAI points to the fact that learning outcomes, when used in qualification standards, must cover "all relevant and measurable learning". But NQAI policy documents also acknowledge that "*not all forms of learning that contribute to enabling a learner to perform in context can feasibly or reliably be captured by the assessment methods available. While such learning is important, and may be part of the desired learning outcomes for a programme of education and training, it cannot be compared against standards and as such cannot form part of the award standards for the inclusion of awards in the Framework*".[21] As in Scotland for instance, qualification standards based on learning outcomes determine the learning programmes which are developed autonomously by training providers in post-compulsory education.

In Germany, the skills and knowledge which should have been developed at the end of the 2-4 years of dual apprenticeship are defined in the training ordinance. They provide an orientation for the planning of training and education actions as well as for assessment, but they are not formulated as performance standards like in Ireland and Scotland. Learning outcomes in core curricula in Poland, which are named "*kwalifikacja*" and integrate skills, knowledge and attitudes, have a similar function and character as in Germany, mainly providing the basis for the development of school curricula.

Finally, learning outcomes are found in some curricula at the level of units, where they express the specific outcomes/objectives of single teaching units and thus precisely determine the contents of training and education programmes. At this level, the case studies in Logistics demonstrate that all countries under scrutiny have introduced outcome-oriented statements in their curricula (i.e. "what learner should know and be able to do"), but that these may be very different in such aspects as their reference point (work situations versus academic disciplines), their suitability as assessment standards, and their differentiation into skills and knowledge, or general and professional competences. Differentiations within the category of outcome statements are operated in some countries for instance along the divide between competence and associated knowledge (in Scottish Vocational Qualifications for instance, a difference is made between what students should be able to do, and what they should know and understand); in other countries, a distinction is made between levels of generality (for instance general versus final competences in France); Slovenia goes a step further in detail provision, by introducing a differentiation between informative and formative operational aims for each professional competence.

4.4 Methods and practices of curriculum development

The process for developing curricula is precisely regulated in all countries under scrutiny as regards participation of various stakeholders, the content of curricula (i.e. the different elements to be included such as entry requirements, learning outcomes, assessment procedures, etc.), or sometimes also the definition of terms (some countries like Ireland, Scotland, France or Germany have developed their own glossary). Methodological questions, on the other hand, are usually left to the appreciation of curriculum development groups which do not always document the work process leading to the draft curriculum. It is therefore difficult to gather evidence on the popularity and practical relevance of different methods presented in literature and country researches could only provide examples of practices which can not be generalized.

[20] NQAI Glossary http://www.nqai.ie/framework_glossary.html
[21] NQAI. 2003: *Policies and criteria for the establishment of the National Framework of Qualifications*. P.20. Available on Internet [last check 03.03.2009]: http://www.nqai.ie/docs/framework/policies/polandcrit.pdf

All the countries examined in this project distinguish between a phase of work analysis leading to a description of occupational tasks and functions, and a phase of translation of work requirements into educational regulations (e.g. learning outcomes, content specifications, learning arrangements, etc.). Although it is not prescribed which methods are to be applied at these two stages (for instance functional analysis, DACUM, ETED – *emplois types étudiés dans leur dynamique,* etc.), the distinction is meant to facilitate the alignment of curricula with labour market requirements. In a range of countries, the first phase results in the definition of occupational standards or professional profiles, which serve as the main input to the definition of learning outcomes (for instance in Romania, France, Scotland, Ireland, Slovenia, Spain). In Spain and France, occupational standards are included in the curriculum documents and content specifications are directly linked to them through a system of codes and matching tables. In other countries, such as Germany, work analysis is a crucial phase in curriculum development, but there is no detailed description of the targeted occupations in the training ordinance. This distinction between two stages of curriculum development and the use of occupational standards or professional profiles for curriculum development is also found in several European projects such as "Sustainable professionalisation" (Cedefop, 2009b).

In the first phase of curriculum development, aiming at the description of work requirements, social partners and experts from the industry are involved in all the countries under scrutiny. In countries having recently reformed their curricula, such as Romania, new sectoral committees have been set up to that purpose. The second phase of curriculum development, which requires a deep knowledge of education and learning processes, is rather dominated by teachers, scientists and experts from the Ministry of Education according to the interviews carried out in the case studies. In Germany, the curriculum for work-based learning is defined by a committee composed mainly of social partners at federal level, whereas the curriculum for school-based learning is developed by a committee of representatives of the Länder, mainly teachers. Both committees cooperate closely to ensure that the two documents will be coherent. In many countries, stakeholder involvement is also encouraged on the local level by systems of "open curricula" or school curricula, through which schools are granted the opportunity to adapt the curriculum to the needs of local and regional labour markets (e.g. in the Netherlands, Poland, Slovenia).

Among other framework conditions and principles for curriculum development, some countries have defined "guiding principles". In Scotland, for instance, where schools have a large autonomy for translating the national curriculum in learning programmes, the following principles of curriculum design are defined: "*challenge and enjoyment; breadth; progression; depth; personalisation and choice; coherence; relevance. Learning should be made available in a range of ways including interdisciplinary learning and a range of opportunities which ensure a broad approach*".[22]

Among the methods used in curriculum development for translating employment requirements into learning outcomes, Bloom's taxonomy and the novice to expert model from Dreyfus/Dreyfus are often cited. In Ireland for instance, several handbooks and user's guidelines have been developed by resource centres at universities. Some handbooks developed or recommended by the University of the City of Dublin[23] or the National Academy for the Integration of Research, Learning and Teaching[24] recommend using

[22] The Scottish Government. 2008. Curriculum for excellence. Building the Curriculum 3. A framework for teachjing and learning, p.8

[23] Donnelly, R., Fitzmaurice, M. 2005. *Designing Modules for Learning*, AISHE. Available online [last check 27/04/2009]: http://www.aishe.org/readings/2005-1/donnelly-fitzmaurice-Designing_Modules_for_Learning.pdf

[24] Kennedy, D. Hyland, A. Ryan, N. 2006: "Writing and Using Learning Outcomes: a Practical Guide". In: Froment, Eric (Ed.): *EUA Bologna handbook. Making Bologna work*. Berlin: Raabe .

Bloom's taxonomy. References to Biggs (2003)[25] and his method of "constructive alignment" are also to be found. Constructive alignment is a method inspired by constructivist learning theories for defining learning outcomes and objectives and aligning them with teaching methods and assessment tasks. In France, cognitive approaches from the field of "professional didactic" are increasingly influent. Professional didactic proposes an integrative and systemic model for studying the development of professional competence and training by "integrating the theory of activity (with the model of twofold regulation) and the main didactical concepts (knowledge of reference, conceptualisation and schemes of action, didactical transposition of work situations)" of situated cognition and cognitivism in the psychology of learning[26].

4.5 Implications for putting in practice outcome-oriented curricula

The researches conducted in nine countries revealed that curriculum reforms include also a change and adaptation of teaching and learning methods. Dubs[27] calls the great changes of the last years a change of paradigms towards constructive teaching-learning forms. Indeed, active learning is promoted in all countries as an essential element for the implementation of competence-based curricula. Generally, the new forms of teaching and learning in VET aim at the following two aspects:

1. A better combination of theoretical and practical learning, in schools and in the companies; the means to encourage the integration of experiential learning and theoretical knowledge are still an issue of controversial debates.
2. Greater involvement and activation of the learners in the learning process, which also means a growing importance of independent and self-regulated learning at school and at work.

New teaching and learning methods are prescribed or proposed in many countries in the curriculum documents. France prescribes for instance the implementation of specific learning arrangements (interdisciplinary projects). Scotland for its part has published an abundant literature on teaching and learning methods in the wake of the reforms to introduce its Curriculum for Excellence.

Empirical researches have demonstrated however that there might be sometimes a huge gap between the written and the taught curriculum. This can not be traced back to a lack of access to information (the Internet was found to offer excellent resources on curriculum reforms and support documents during the case study on Logistics). An OECD survey conducted in lower secondary education[28] notes that there is a difference between teachers' beliefs concerning effective teaching and learning methods, and their practices. According to this survey, although teachers are increasingly inclined to regard students as active participants in the process of acquiring knowledge, in the classroom, they put greater emphasis on ensuring that learning is well structured than on student-oriented activities which give them more autonomy. Following the OECD survey, this could be due to the lack of teacher and trainer's training: the results show that "teachers who undertake professional development undertake a

[25] Biggs, John Burville. 2004. *Teaching for quality learning at university. What the student does*. 2. ed., reprinted. Maidenhead: Open Univ. Press [u.a.].

[26] Rogalski, J. 2004. La didactique professionnelle : une alternative aux approches de « cognition située » et « cognitiviste » en psychologie des acquisitions. *@ctivités, 1*(2), p. 103.

[27] Dubs, R. 1998. Berufliches Lernen im Wandel? Aktuelle Entwicklungstendenzen in der Berufsbildung. In: Euler, D. (Ed.): *Berufliches Lernen im Wandel. Konsequenzen für die Lernorte?*. Nürnberg: Institut der Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit, p. 11-32.

[28] Organisation for Economic Co-operation and Development. 2009. *Creating effective teaching and learning environments. First results from TALIS*. Paris: OECD.

wider array of teaching practices and are more likely to co-operate with other teachers. This pattern is true in every country"[29].

Further researches could clarify whether the same phenomenon is to be observed in VET as well. An additional explanation for the gap between written and taught curriculum might be that prescriptions in curricula are subject to various interpretations from teachers, headmasters and even inspectors, teacher's trainers or other actors involved in curriculum implementation[30]. Most countries under scrutiny have a well developed system of professional development for teachers and trainers but empirical research[31] and interview partners in the case study on Logistics did not conceal that in practice, there is not enough attention paid to teachers training when implementing curriculum reforms.

Finally, a survey among students and interviews with teachers in two vocational schools in Germany and the Netherlands show that the paradigmatic change "from teaching to learning" is indeed taking place, but that this is not always seen as positive by teachers and trainers who sometimes perceive new learning methods as "too open" and not "structured" enough. This could indicate that the introduction of learning outcomes, insofar as it aimed at a change in learning and teaching practice, might partly miss its target also because of oppositions among teachers and trainers. In any case, these results of the study visits must be used carefully as they are far from being representative and given the pedagogic freedom granted to teachers and the level of decision-making of training providers allow for a certain degree of diversity even within the same country.

Implications for putting in practice outcome oriented curricula are not only limited to teaching approaches but involve important changes in students' assessment methods, in teaching materials, in learning environments and other issues that will be discussed in the forthcoming study.

5. Time table and outcomes

The study will be finalised at the end of 2009. The findings will be discussed in a workshop on "**Curriculum innovation and reform: policies and practices**" to take place in 9 and 10 November 2009 in Cedefop which will also provide the basis for debating future needs for analytical work in this field. The study will be published in mid 2010 on Cedefop's website www.cedefop.europa.eu

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[29] Op. Cit. p.88.
[30] Lantheaume, F. 2008. *Les enseignants de lycée professionnel face aux réformes. Tensions et ajustements dans le travail*. Lyon: INRP.
[31] Psifidou, 2009. "Training teachers in Bulgaria: changing learning paradigms". In forthcoming *Teachers' training in the World,* in the series Comparative Education, Athens.