

New and emerging issues in vocational education and training research beyond 2010

**Russell Armstrong, Catherine Béduwé,
Jean François Germe, Tom Leney,
Jordi Planas, Marianne Poumay**

In:

CEDEFOP (ed.)
Modernising vocational education and training
Fourth report on vocational education and training research in Europe: background report
Volume 2.
Luxembourg: Office for Official Publications of the European Communities, 2008
(Cedefop Reference series)

Reproduction is authorised provided the source is acknowledged

Additional information on Cedefop's research reports can be found on:

http://www.trainingvillage.gr/etv/Projects_Networks/ResearchLab/

For your information:

- the **background report** to the fourth report on vocational education and training research in Europe contains original contributions from researchers. They are regrouped in three volumes published separately in English only (Forthcoming 2008)
- A **synthesis report** based on these contributions and with additional research findings will be published in English, French and German. (Forthcoming 2009)
- In addition, an **executive summary** in English, French and German (Forthcoming 2009)

The background and synthesis reports will be available from national EU sales offices or from Cedefop.

For further information, contact Cedefop project managers:

Pascaline Descy, Pascaline.Descy@cedefop.europa.eu

Guy Tchibozo, Guy.Tchibozo@cedefop.europa.eu

Manfred Tessaring, Manfred.Tessaring@cedefop.europa.eu

Abstract

This paper is a cooperation between researchers from three areas of vocational education and training (VET) and lifelong learning research. It aims to identify several new and emerging issues that will be crucially relevant to VET research in the post Lisbon decade. The paper begins by exploring the main drivers currently influencing European VET systems and draws up four scenarios for 2010-20, each of which may be a plausible outcome for future European governance, and by extension, VET governance. The authors then explore the nature of uncertainty in the demand and supply sides of European and local labour markets, suggesting that research into the impact of these uncertainties will need to examine how individuals adapt to new situations, as well as the impact on the nature and structure of VET supply. The paper also attempts a forward looking analysis of innovative teaching and learning in VET – developing twin themes of facilitating expert learners and the need to develop a scholarship of teaching and learning in VET.

There will clearly remain important and urgent items of unfinished business in European and national VET policy and implementation in 2010. This paper argues strongly that these are still important for Europe's future economic, social and environmental ambitions, that the achievement of currently agreed priorities will remain a vital political issue, and that research should have an important role in overcoming identified barriers and achieving success in these respects. The paper identifies several issues that remain under-researched. These include meeting the learning needs of older workers and diverse migrant communities. Finally, the paper identifies five new issues that VET research should concentrate on.

Since so much policy and research attention at European level focused on the period 2000-10, this paper intends to make a contribution to opening the debate on European VET research priorities in the decade that will follow.

Table of contents

1. Introduction	6
2. Moving the focus to 2010-20.....	9
2.1. VET – an increasingly urgent priority on the world stage	9
2.2. The likely legacy of the Lisbon strategy in 2010 and future priorities	12
2.2.1. The renewed Lisbon strategy for growth and jobs.....	13
2.2.2. Progress towards the main objectives and challenges	14
2.2.3. Likely items of unfinished business for VET	16
2.3. Pressures facing future VET systems.....	19
3. Future governance of VET	21
3.1. National/supranational/international dynamics; the four futures of Europe	21
3.2. Implications for VET governance	24
4. Uncertain economic and labour-market environments.....	27
4.1. What do we mean by uncertainty?	27
4.2. Increases in employment and labour-market risks	28
4.3. Shorter time frames for choices and actions in the labour market.....	28
4.4. Decreasing durability of existing practices in the regulation of employment and training.....	28
4.5. Uncertainty caused by changes in labour-market demand.....	29
4.6. Contradictions in labour-market demand and job security	29
4.7. Complexity of qualifications development and uncertainties about the definition of job profiles.....	30
4.8. Increasing the collective dimension of work and competences	30
4.9. Emerging questions on the relationship between work, careers and social organisation	31
4.10. A crisis of the <i>métier</i> (<i>Beruf</i> ; trade or profession) and diploma – central to the relationship between VET and employment	32
4.11. Managing diachronic trends of supply and demand in the labour market	33
4.12. Changes in the models of competence production and rebalancing the importance of IVET and CVT.....	33
4.13. Strategies of individuals to increase their capabilities amid uncertainty	34
5. Competence: notion and recognition	37
5.1. Why the notion of competence?.....	37
5.2. The place of competences in labour-market information and regulation.....	37
5.3. Different notions and approaches to competence	38
5.4. The development of the notion of competences.....	39
5.5. Development of the concept of competences and its relationship to VET qualifications	41

5.6.	The methodology for recognition of competences in national qualifications frameworks (NQFs).....	41
5.7.	Some questions on national and European qualifications frameworks (EQF)	42
6.	The attractiveness of VET supply	45
6.1.	Changes in the model of competences production: the place of VET and their modalities	45
6.2.	Conditions needed to make VET attractive for young people	46
6.3.	Older workers and migrant workers – new VET clients groups	47
6.4.	Lifelong learning: from concept to reality	48
7.	Innovation in VET teaching and learning.....	49
7.1.	Introduction	49
7.2.	The impact of technological innovation on European VET research and development	49
7.3.	How to develop and optimise initial and continuing training – linking VET teaching expertise to professional/technical expertise?	50
7.4.	A scholarship of teaching and learning	51
7.5.	Is training optional or required for teachers?	52
7.6.	A likely scenario.....	53
7.7.	Expert learners: how can training and work organisation make learning optimal? How to avoid deficit and unequal access?	53
7.8.	What do we mean by empowering learners?	54
7.9.	Why empower learners?.....	54
7.10.	How can we empower learners?.....	55
7.11.	Validating prior knowledge and experience	55
7.12.	IT as a developing, useful tool: harnessing new IT to develop pedagogies; learning and accreditation	56
7.12.1.	Online management of competences	56
7.12.2.	Electronic portfolios (e-portfolios)	58
7.12.3.	Shared online tools and contents.....	60
7.13.	Conclusion.....	61
8.	Emerging issues in VET research – conclusion	62
	List of abbreviations.....	65
	Bibliography.....	66

List of tables and figures

Tables

Table 1:	European progress on some of the EU structural indicators	15
Table 2:	Progress on agreed priorities for the education and training 2010 work programme	17

Figures

Figure 1:	Average hourly labour costs for a range of countries.....	9
Figure 2:	Plausible scenarios for VET governance (2010-20).....	22
Figure 3:	Multitutor validation for a set of 20 competences in a group of 5 learners – screenshot of an online competence management tool.....	57
Figure 4:	Main components of a portfolio to teachers	59

Boxes

Box 1:	Individual strategies for labour-market risk management.....	35
Box 2:	Questions for research on VET teaching and learning.....	50

1. Introduction

Cedefop's fourth research report theme, modernising vocational education and training (VET), invites some careful analysis as to which issues and priorities for VET research and development are to be seen on the horizon, for instance the immediate period following 2010, the deadline of the Lisbon strategy. For European cooperation, it is appropriate to take existing Lisbon programmes as a kind of watershed, with further development also likely to build on current progress. Therefore, we have focused attention on identifying some new and emerging themes that are likely to be important for the field broadly defined as VET research in relation to 2011 onwards. The dilemma facing policy-makers is whether to pursue less ambitious targets than the original Lisbon goals. This direction, while being more readily achievable, would risk losing the pace of momentum towards future development and reform.

It is unlikely, though conceivable, that we will identify tasks, problems and challenges that no practitioner or analyst, researcher or policy-maker has yet conceptualised. Rather, our analysis identifies themes to which little coherent attention has yet been paid at European level, and which should merit considerable priority in the future, bearing in mind the strong emphases placed on innovative research and lifelong learning in the renewed Lisbon agenda for innovation in Europe. Identifying issues that are 'crystallising' is an appropriate analogy. Other analysts are also looking ahead, but goals and priorities for Lisbon 2010 have dominated the policy and research conversation at European level to such an extent that few people are looking beyond 2010, even as we write in mid 2006. Most notably, the European Commission's Communication to the 2006 Spring European Council, *Growth and jobs, working together for Europe's future* refers to a 'renewed' Lisbon strategy, with repeated emphasis on growth and jobs (EC, 2006a).

Our paper is a prospective piece of work that no scientific method that we know of can handle. So, we agreed instead a clear methodology with editors. Our contribution relies strongly on the cross-disciplinary and international expertise of partners in the team: specifically, in economic and labour-market analyses (both quantitative and qualitative research), in teaching and learning/e-learning developments and in lifelong learning and VET analysis at European level. To identify forward-looking priorities we wrote three initial expert papers on specific themes, which we merged into an interim report. To take the argument forward we met several times and had the benefit of a detailed commentary on our interim report from editors at Cedefop. To widen and nuance our analysis we conducted a small number of interviews with relevant experts who have an interest in shaping future VET research. We also had access to several other papers from the *Fourth research report*, whose outcome could also benefit our analysis. This helped to shape the analysis we present in this report.

From a vantage point that could otherwise become impossibly broad, we chose to concentrate on some specific fields, and these necessarily reflect our diverse experience and expertise. This was reflected in our initial papers, which concerned these themes:

- (a) moving the focus from 2000-10 to 2010-20 and beyond;
- (b) people's changing preferences and careers and the changing labour market;
- (c) innovation and future changes in VET teaching and learning.

The Lisbon goal and the associated programmes that are developing for lifelong learning including VET are the context for this study – as are the wider economic, social and environmental ambitions of Europe. The *Stern review* in the UK (Stern, 2006) and other national and international reports will bring environmental concerns to the top of research and policy agendas. The first point to make here is that, so far, VET research has given a great deal of attention to the associated European economic and social agendas, yet, it has not adequately explored the contribution of VET to environmental sustainability nor the development of sustainable forms of energy, which is becoming an increasing priority.

That some common goals, priorities, actions and collaborative programmes have developed for lifelong learning including VET is an important step forward. A success of the Lisbon years (2000-10) is undoubtedly the expansion of the European Union (EU) from 15 to 25 Member States while at the same time creating conditions for closer voluntary cooperation in a range of policies. The designation of new candidate countries is a further sign of expansion, although Turkey's accession will continue to raise controversy. Yet the failure of the European constitution project and dilemmas surrounding the mid-term EU budget – the financial perspective 2007/13 – settlement in 2005 indicate some of tensions likely to impact on the 'wider and/or deeper' development of the EU. Later, we take up the wider and or deeper theme by looking at a series of scenarios and their impact for governance of lifelong learning and VET at European level.

As far as achieving Lisbon goals is concerned, and although intergovernmental and stakeholder cooperation have improved, progress are in many ways disappointing across the main defined fields of activity, against ambitious goals set in 2000 and following years. The Lisbon programme gave undoubtedly an impetus for greater cooperation between countries, not least through the education and training 2010 work programme. Although this is an encouraging step, the biennial joint report on the education and training 2010 programme provides strong evidence that, while moving forward, developments in policy and implementation for lifelong learning – including VET – are not yet sufficient to constitute across Europe the shift to a European knowledge society and economy, called for by the European Commission and heads of State at the Lisbon meeting in 2000 (Council of the EU, 2006).

The European Economic and Social Committee (EESC) develops this criticism further; 'the Lisbon Strategy will not achieve its objectives of international competitiveness, economic, social and environmental progress and sustainable development without a comprehensive review of the method, the institutional and political arrangements and the cooperation instruments tasked with its delivery' (EESC, 2004, p. 9).

The EESC also outlines future objectives needed to concentrate efforts towards achieving the Lisbon goals. These include:

- (a) ‘enhancing the supply of young people with “knowledge industry” skills;
- (b) promoting retraining opportunities to the new skills for all adults;
- (c) expanding the R&D capacity of institutes of higher education and research; departments of business organisations;
- (d) incentives to reduce the risk and enhance the gains from innovation’ (EESC, 2004, p. 12).

This is the starting point for our analysis. We begin by identifying some challenges for Europe and key aspects of the unfinished Lisbon agenda. Then we propose some plausible scenarios for the mid-term future (2010-20) and some of the main drivers that will shape lifelong learning and more specifically VET. These suggest some particular issues relating to demographic and population developments, and issues for governance of VET. We next explore how patterns of individual preferences and careers may change radically in a rapidly changing and uncertain labour market, with implications for the supply of training. We also examine new paradigms for teaching and learning that may be emerging, supported by, but not necessarily driven by, developments in technology. The analysis we undertook led us to identify some themes in VET as generating both new and ongoing issues for research and development post 2010, including:

- (a) Lisbon 2000-10: unfinished business;
- (b) the broader picture – the impact of drivers and plausible scenarios 2010-20 on VET;
- (c) governance;
- (d) uncertain economic and labour-market environments and changing preferences;
- (e) the supply of VET;
- (f) competence: concept and recognition;
- (g) empowering VET learners;
- (h) professionalising VET teachers/trainers.

We will identify specific issues and questions in regard to each of these for VET research and development. Key issues and questions are highlighted throughout the text and are summarised in the conclusion.

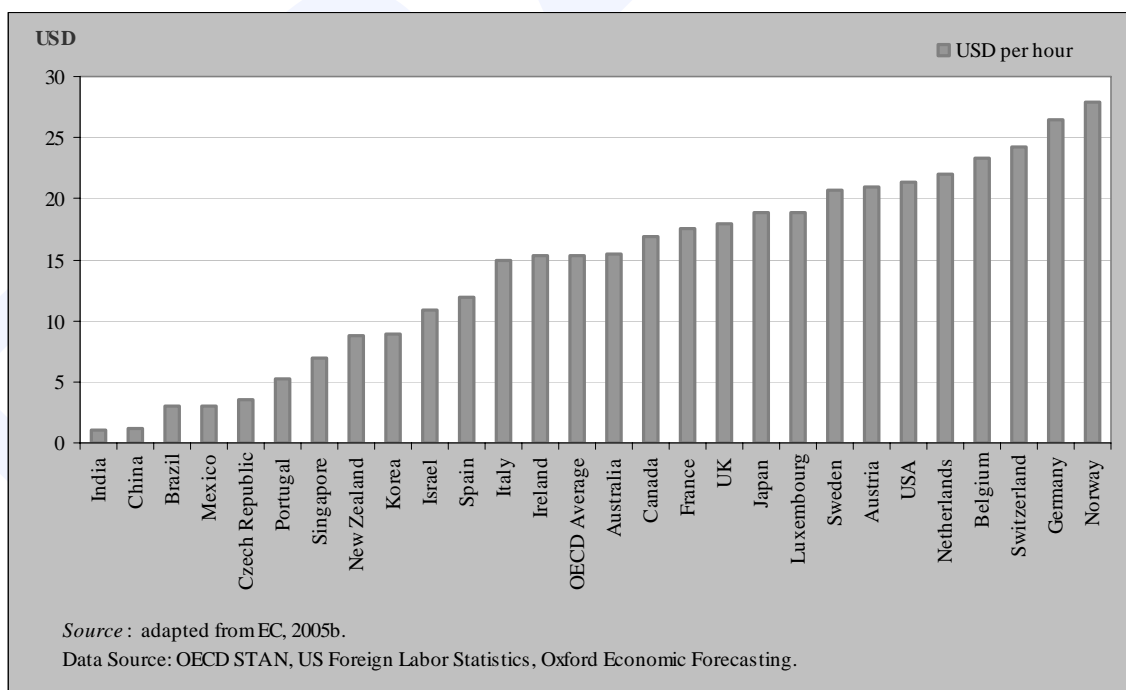
2. Moving the focus to 2010-20

2.1. VET – an increasingly urgent priority on the world stage

The rapid and uncertain changes in the global economy; the need for new and high skills in the work organisation and labour-markets development; the pace of technological change everywhere and demographic change in advanced countries; all led to a sharply increased importance of VET on the policy agendas of national and international bodies. Some countries (e.g. in the main US and Japan) have settled for an expansion of tertiary VET after a general upper secondary phase, while others – including many European countries – have identified the need to improve rapidly their arrangements for VET provision towards the end of compulsory schooling and/or in the upper secondary phase, as well as in higher education.

Table 1, taken from the European Commission contribution to the October 2005 Heads of State meeting on *European values in a globalised world* (EC, 2005b) shows Europe's disadvantageous position in terms of labour costs, compared with some international competitors, not least Brazil, China and India, whose higher education systems are already undergoing rapid change or are likely to expand rapidly in the near future.

Figure 1: Average hourly labour costs for a range of countries



The increasing availability of technical and high skills in the labour markets of China and India also serve notice to European countries that the old adage saying Europe cannot compete on costs but can compete on skills, stands to be challenged, even though high skills

remains a cornerstone for achieving success in the economic, employment, social and environmental goals of the Lisbon project.

Most governments and international organisations are beginning to recognise the importance of increasing the availability of and access to continuing training as a key part of implementing lifelong learning, though achievement in this area remains an enormous challenge.

Thus, it is noticeable how prominent VET has become in recent OECD studies, such as the recent analysis of the usefulness of qualifications systems for motivating participation in lifelong learning (OECD, 2006) and the current study of the recognition of informal and non-formal learning (OECD, 2007). Similarly in Europe, although the Bologna process for higher education began before the inception of the Lisbon goal for education and training, the Copenhagen declaration (EC, 2002a) and the Maastricht communiqué (EC, 2004a) now ensure that VET has a higher profile and remains an integral part of Europe's developing policies and practices for lifelong learning.

The drivers that are motivating national and international stakeholders to identify new strategies for lifelong learning have a clear impact on the economic and social well being of both communities and individuals. Further, VET has a key role in the resolution of challenges in many instances.

Several examples illustrate the dynamic relationship between VET and key drivers.

Uncertainties of global economic development alongside the high costs of living, labour and production in most of the world's advanced economies mean that all European countries are aiming for highly skilled workforces to make the best of their opportunities in the competitive world market, in which many European countries are at a disadvantage. This creates changes in work organisation and in the division of labour, linked in turn with the growing likelihood that individuals may wish to or have to change occupation several times over their career. In these circumstances people need broad competences, not easy to define, and traditional skills tend rapidly to become obsolete. The pace of technological change and the rapid development of the information society underpin this change in the demand for skills and calls on individuals – and create uncertainty for individuals because of both the pace and unpredictability of technological innovation and labour-market changes.

Demographic change is an equally well-recognised, though more predictable, factor driving change. Except for Turkey and to some extent Ireland, European member and accession state populations are shrinking while, at the same time, ageing. Current projections have identified that, by 2050, there will be one elderly inactive person for every two of working age, as compared to one in four in 2004 (Eurostat, 2006c). The share of population over the age of 65 will increase considerably across the EU, with a concurrent dejuvenation, if fertility rates continue their steady reduction. Achieving competitiveness through raising employment levels, balancing conflicting demands on national budgets and giving older workers a fair chance to make a living, all call for a high investment in older workers' skills, as well as

others who could join, rejoin or stay in the labour market. Yet, with a few notable exceptions, little research and development activity has asked seriously what skills older people will need to develop and how work organisations can accommodate their needs.

Migration flows can also impact on European demographic shift, and VET is called upon to have a major impact on social inclusion, by opening opportunities for migrants, and also following generations. Immigration is recognised as a source of cultural and social enrichment, contributing to entrepreneurship, diversity and innovation, bringing with it advantages such as an increased labour supply, and increased overall product, therefore labour demand (EC, 2005c) As the economic and social consequences of demographic ageing are felt, immigration remains a useful, beneficial tool to alleviate negative impacts. However, to maximise this effect, migrants must be integrated into citizenship and working life, and realise their potential to contribute to sustainable development in the EU. This must include intra-EU migrants and their dependents, as well as those originating from third countries. It is here that VET can play a significant role in equipping migrants with knowledge, skills and competences needed to succeed (we address this issue further in Section 5).

Notably, transition into the labour market for many young people is difficult, with youth unemployment more than double the overall European rate for workers aged over 25 (17.9% for under 25s, compared with 7.7% for 25+ in December 2004) (EC, 2005a).

The argument lying behind this paper is that the sum of these drivers creates change and uncertainty for economies, communities and individuals, and that VET is one of the policy mechanisms that must make an effective response. Some international bodies, particularly the EU, recognise in their policies how intertwined the economic and social aspects of policy formation and implementation are.

These drivers are dynamic, particularly as they are associated with players who are growing (in some cases, diminishing) in influence. In VET, international organisations and others crossing boundaries are among those enjoying a growing dynamic influence across the field of VET. Certification tends to become international, as indicated by the growth of master of business administration and the growing use of internationally based qualifications in ICT. In international terms, the OECD did much to set up the current concentration on lifelong learning, and the PISA tests have themselves become a noteworthy international driver of reform in education systems, to an extent that would have been unimaginable 20 years ago. EU education and training programmes are based on voluntary cooperation (open method of coordination – OMC) between Europe, Member States and other stakeholders, and have since 2000 come to occupy a dynamic role in national and more specific developments. Perhaps changes in higher education practices and the creation of a European higher education space following the Bologna process are the clearest instance to date of Europe's dynamic role in shaping Member States' systems. To a greater or lesser extent, influential pressure is exerted in various parts of the world by international bodies over national systems, whether the EU over accession and partner countries, the World Bank through its donor programmes or the Asia Development Bank over client countries such as Vietnam.

The *Lisbon Council Policy Brief* for the European Commission argues that countries and continents investing heavily in education and skills benefit most in both economic and social terms (Schleicher, 2006). The context is one where the most effective modern economies will be those producing the most information and knowledge, and education and training suppliers are finding it a tough challenge to meet demand. Using Finland as a case study of good practice and sustained and successful transformation, Schleicher argues that linking high expectations with good support systems and collaborative networks enabled a successful paradigm shift from centralised prescriptions to a focused set of educational goals that give schools responsibility for educational outcomes and implementation, focusing on the needs of all students.

Schleicher develops the argument along the following lines. Many of Europe's larger systems have been slow or unwilling to modernise, their performance in world comparisons is mediocre, and they no longer lead the world in producing knowledge and skills through their schools and universities. Successful reform of initial VET – particularly where early differentiation into different types of education or school is the norm – must be sufficient to face these challenges. PISA results show that avoiding early tracking can be a useful strategy. While this is an issue for debate, new research may be able to develop our understanding further.

About education and training supply, two other prominent aspects hold Europe back. First, universities attract insufficient funding in particular from corporate and private sources to keep up with, mainly, North American universities and reflect insufficiently wider stakeholder interests. Second, and as all recent studies for the European Commission have concluded (see the following section) lifelong learning is far from a reality in most European countries, where low workplace learning opportunities characterise many sectors and where inequalities of previous education levels and factors such as age and gender greatly diminish opportunities for large parts of the population. Some countries, however, have successfully grasped the need for major reform, and these include countries as diverse as Canada, Korea and the Nordic countries of Europe.

2.2. The likely legacy of the Lisbon strategy in 2010 and future priorities

Rapid but uncertain developments in the global environment and the challenges suggested in the *Lisbon Council Policy Brief* (Schleicher, 2006) help to contextualise some of the emerging issues for VET research and development. We will next look at the extent to which the Lisbon strategy is likely to achieve its goals by 2010, in its wider application and for education and training. Then we will return to the theme of governance and the need for more research on drivers and actors that can be most influential in shaping reforms to VET.

2.2.1. The renewed Lisbon strategy for growth and jobs

The high level reports commissioned by the European Commission (Kok, 2003; 2004) and the recent mid-term review of the Lisbon strategy reformulate the goals and priorities of the original Lisbon 2000-10 programmes. The new vision underline that economic and employment trends in Europe are holding back progress, and are damaging the prospects for progress towards the aspirations and goals contained in the Lisbon declaration. It is probably fair to conclude that goals have become a little more modest and realistic, and that the emphasis is on implementation of radical but sustainable reform. All recent European analysis stress the important (though not unique) role of lifelong learning in achieving a more dynamic momentum towards the overarching goals.

European values are identified and championed by the Commission in its contribution to the Heads of State meeting under the UK Presidency (EC, 2005b). The document states: 'Europe must reform and modernise its policies to preserve its values. Modernisation is essential to continue keep Europe's historically high levels of prosperity, social cohesion, environmental protection and quality of life. Today, the Europe of dynamism, innovation and openness [...] sits side by side with the Europe of 19 million unemployed, child poverty and stagnant growth, where too many are excluded from opportunity and prosperity. This is the uncomfortable duality which undermines the many achievements of the European Union and its Member States after a half century of peace and improved living standards' (EC, 2005b, p. 3).

In the renewed formulation of Lisbon economic growth, productivity and high employment are identified as key motors for achieving both economic and social goals, with the emphasis placed clearly on reform and implementation.

Under the Austrian Presidency in 2006 the Commission set out these ambitions for the renewal of the Lisbon process in a way intended to focus on implementation at all levels, and under the banner heading *time to move up a gear*, four key areas that need a new emphasis for reform are identified (EC, 2006b):

- (a) investment in research and innovation;
- (b) a new business climate that enables entrepreneurship and business start up and growth, particularly among small and medium-sized enterprises;
- (c) employment policies that remove barriers and help people to work and to develop and use their skills at every stage of working life;
- (d) a sustainable energy policy.

Each of these priorities has implications for emerging areas of VET research. Of these four priorities, implications of the need to develop new and innovative approaches to energy production is on the agenda, yet the role of individual skills to secure sustainability of the global environment is a surprisingly neglected theme. Main priorities are to define aspects of priorities in which VET has a significant role and to identify implementation, technology

transfer and peer learning mechanisms that can help to achieve the goals, bearing in mind the economic and social goals are seen as intertwined.

2.2.2. Progress towards the main objectives and challenges

To identify some of the key future issues for VET research and development we need first to enquire how far existing priorities of the Lisbon 2000 declaration are on course for achievement, as concerns the whole economic and social programme and then, in particular, as concerns lifelong learning. We do this by analysing progress towards some of the key priorities that are expressed in terms of indicators and benchmarks.

Overall – and despite some clear successes – Europe as a whole made so far only disappointing progress towards achieving the main Lisbon targets for the economic, social and environmental aspects of the Lisbon declaration. In 2002, 2004 and again in 2006 the European Commission published the evidence to report on the disappointing progress that Europe is making towards achieving the economic, social, employment, innovation and environmental aims that characterise the main features of the Lisbon programme (Leney et al., 2004). Besides, current analysis of international trends in GDP confirm that Europe's economic performance seems to be losing ground compared to main competitors in China, India and the US. This is notwithstanding the good performance of some countries in Europe. Indeed, the World Economic Forum identifies Finland as the leading country, with several other Nordic countries and Austria well placed, and Estonia breaking into the high GDP per capita grouping (Lopez-Claros, A. et al., 2006). Nevertheless, the evidence of the United Nations *Human development report 2005* (UNDP, 2005) does provide an encouraging note, since many Member States achieve a high rating on the combined education, economic and quality of life indicators, as compared with other advanced countries, including the US.

As Table 1 shows, European Commission's predictions are pessimistic for economic and employment growth and increases in investment in the forthcoming period. Alongside slow economic growth and stagnant employment trends in Europe, we have seen some evidence of a negative responses to existing levels of migration in some countries, and a marked response to social exclusion on the part of some young migrant groups in metropolitan Europe.

In terms of lifelong learning and VET some clear objectives for voluntary cooperation involving European and national levels and engaging stakeholders are agreed and are now at an implementation stage. Yet, progress towards the identified priorities for lifelong learning is mixed, and in 2010 we can expect that many of current actions such as European Qualifications Framework (EQF) and European credits for VET (ECVET) still be at a developmental or first evaluation stage.

Table 1: European progress on some of the EU structural indicators

Indicator	Verdict in 2002	Verdict in 2004	Verdict in 2006
Labour productivity	‘[...] gap in GDP per capita between the European Union and the US has remained unchanged’ (EC, 2002b, p. 9)	‘[...] growth rate in productivity [...] has been going down [...] efforts to catch up with the United States are at a standstill’ (EC, 2004b, p. 9)	GDP per capita remains 65% of US level, despite accelerating labour productivity growth rate
Employment rate	Economic slowdown ‘has interrupted the sustained period of falling unemployment and job creation’ (EC, 2002b, p. 10)	2005 target of 67% employment rate will not be reached – with economic growth the 2010 target of 70% is reachable	Employment rate reached 63.3% in 2004. Recent work projects further rise to 67% by 2010, with 70% target possibly reached in 2020
Employment rate of older workers	Remains low ‘[...] this segment of the population is increasing which may make the necessary adjustments more difficult’ (EC, 2002c, p. 5)	The target is for a 50% employment rate among 55-64 year olds by 2010. However, ‘the trend [...] is indeed worrying’ (EC, 2004b, p. 9)	‘Older people have seen employment rates rise markedly since 2000, with an accumulated increase of 4.4 pp to a rate of 41%’ (EC, 2006d, p. 8) However, the 50% target will not be reached
Expenditure on R&D	‘Governments and business [...] still invest less [...] than the US and Japan’ (EC, 2002c, p. 8)	Research investment has been fragmented and sluggish. Annual growth rate for investment is wholly insufficient to meet the 3% target (2010)	‘Relatively low levels of private R&D investment [...] are an impediment to knowledge accumulation and long-run growth [...] the EU-25 would remain substantially below the 3% target in 2010’
Youth education attainment level	‘[...] almost 18% of early school leavers do not acquire additional qualifications’ (EC, 2002c, p. 8)	Likely to be met, particularly with new Member States having high attainment at ISCED level 3	‘Almost 15% of young people in the EU still leave school early, reflecting only slight progress towards 2010 benchmark’ (Council of the EU, 2006, p. 4)

Business attainment	‘[...] new capital raised on stock markets in the European Union increased markedly between 1997 and 2000 [...]. Nevertheless, total stock market capitalisation relative to GDP [...] remains only two thirds of the level in the United States’ (EC, 2002c, p. 10)	Investment in businesses fell between 2000 and 2002; public investment is also down and also lower than in the US	‘Regarding SMEs [national] programmes do not go far enough to foster a more positive attitude towards entrepreneurship [...] related targeted measures to improve investment should also be considered’ (EC, 2006b, p. 16)
Long term unemployment	‘down from just over 5% in 1995 to 3.6% in 2000, even though it is estimated to rise slightly in 2001’ (EC, 2002c, p. 12)	Significantly down – but some groups and regions will be difficult to progress	After several years of decline, long-term unemployment again increased slightly (to 4.1%) in 2004 and the job prospects of vulnerable groups have deteriorated

The 2006 Council (Education) and Commission joint interim report of progress towards the education and training 2010 work programme concludes that cooperation in education and training has developed strongly in aspects such as higher education and, more recently, VET. Nonetheless, progress towards several of the priority indicators remains considerably below the progress agreed as necessary by governments (Council of the EU, 2006).

Table 2 outlines Commission’s conclusions.

2.2.3. Likely items of unfinished business for VET

Many Member States are close to achieving the objectives for upper secondary participation, so this will remain a key issue in only a minority of Member States after 2010, but not at EU level. Similarly, the target for graduates in MST will remain an issue in a minority of countries only and not at EU level – unless research and policy priorities suggest the target should be raised to meet the prerequisites of the knowledge economy and a learning society. Further research should show whether participation increases in technological subjects are mirrored by decreases in the pure sciences, and what the impact of this would be. The gender imbalance in these areas of higher education remains an issue, despite the strong trend to a greater uptake of higher education by females compared to males. An issue that came to the

fore in the latter stages of the Lisbon process is to develop new forms of non-traditional, VET-related higher education. This is likely to grow further in importance.

Table 2: Progress on agreed priorities for the education and training 2010 work programme

Priority indicator	Commission's conclusion – 2006 progress report
Reducing the proportion of low performing 15 year olds in key competences	In 2000 the share of 15 year olds with poor reading skills was 19.4% (data available for 16 Member States only). According to the benchmark this share should decrease by one fifth by 2010 (and thus reach 15.5%). While it has decreased in some Member States (notably Latvia and Poland) no progress has been achieved since 2000 (2003: 19.8%).
Reducing the number of early school leavers	In 2004 early school leavers represented nearly 16% of young people aged 18-24. Despite continuous improvement in reducing the share, additional progress are needed to reach the benchmark of 10% by 2010. However, several Member States, notably the Nordic countries and many of the new Member States, already reduced this share to less than 10%.
Increasing the number of graduates in maths, science, technology and addressing the gender imbalance	Since 2000 the number of graduates in mathematics, science and technology (MST) has increased by 16%. The EU achieved thus the benchmark of increasing it by 15% by 2010. Progress has also been achieved in reducing the gender imbalance in MST graduates. The share of female graduates has increased from 30.4% in 2000 to 31.1% in 2003. While Spain, Italy, Poland and Slovakia showed the strongest growth in the number of MST graduates in recent years (annual growth above 10%), the Baltic States perform best as regards gender balance.
Raising the proportion of young people who complete at least upper secondary education	The share of young people (aged 20-24) who completed upper secondary education has only slightly improved since 2000. There is thus little progress in meeting the benchmark of 85% by 2010. In some countries improvements slowed down or even reversed. However, some others with a relatively low share, notably Portugal and Malta, made considerable progress. Many of the new Member States already perform above the 85%. Some of them – the Czech Republic and Slovakia, Norway and Croatia raised the share to over 90%.

<p>Increasing the percentage of the working age population participating in lifelong learning, particularly workplace learning</p>	<p>The percentage of the working age population who participated in education and training in the four weeks prior to the survey amounted to 9.9 % in 2004. Since the data overstate progress as a result of breaks in time series, this represents only a slight real progress compared to 2000, despite the nominal two-percentage point increase. Additional efforts are needed to reach the benchmark of a 12.5% participation rate in 2010. Nordic countries, the UK, Slovenia and the Netherlands currently show the highest lifelong learning participation rates.</p>
--	---

Several of the agreed priority indicators for lifelong learning are most likely to remain high on the research and policy agendas post 2010. The strongest evidence suggests European ambitions in their respect are both important in terms of Europe’s economic and social future, and unfulfilled as objectives.

With some countries still choosing to differentiate young people into general and vocational pathways during the later years of compulsory schooling and others looking at vocational or pre-vocational education as a potential mechanism to re-engage young people bored and disaffected by general schooling towards the end of the compulsory phase, VET research should be able to identify some of the contexts and policies both for reducing the number of early school leavers and lowering the proportion of 15 year olds with poor basic skills. Both of these are likely to remain key issues.

VET research should also have a key role in identifying how to engage adults in the workforce in training, and also those seeking to enter or re-enter employment. Later we take up the specific issue of engaging older workers and migrants as calling for higher priority than is currently the case. Ways of overcoming existing inequalities in access to continuing training, well known but not well addressed in terms of policy or action in most countries and in many sectors, is a task for policy-oriented VET research, considering the needs of both learners and enterprises.

Peer learning as part of the open method of coordination (OMC) is similarly problematic, as OMC has entered the next stage of the 2010 education and training implementation programme. In broad terms, moving from the first stages of OMC – identifying priorities and benchmarking – to the later phase of identifying good practice and conducting peer learning exercises seems predictably to be a difficult transition. This will need some immediate action on the part of the European Commission and Member States, but in the longer term raises some noteworthy questions of governance for lifelong learning and VET at European level. After suggesting plausible scenarios for European developments, we will return to the question of governance for key VET programmes.

It is similarly the case that some of the specific actions being developed at European level with a specific reference to VET will be important but unfinished business in 2010. This includes, notably, the EQF project (Section 4) and associated developments of the recognition of informal and non-formal learning and mechanisms development for credit accumulation and transfer. Each of these is subject to wide ranging comparative study and research at

present, but this is likely to have to develop further in the next decade. As projects such as EQF proceed towards implementation at EU level, they will need robust impact evaluation, along similar lines to those explored in Cedefop's third research report on vocational training research in Europe (Coles, 2004). This system of analysis must be more comprehensive than has previously been the case.

2.3. Pressures facing future VET systems

Recent OECD studies (OECD, 2006) and research into progress towards the Lisbon goal (Leney et al., 2004) identify, not surprisingly, economic pressures as the main driver acting on VET systems. Countries want to strengthen the link between education and employment. They also point to discrepancies between skills needed in the workplace, job training and qualifications. Economic pressures arise in response to global economic trends as well as local and national economic needs, such as the need to be responsive to innovation, the development of work organisation and to develop human capital. These generic pressures act as a force for national, regional, sectoral – and increasingly international – integration in VET since they focus attention on responding to skills issues that are common to a range of different countries. Vocational qualifications systems also have potential to improve the link between education and work, for set up new pathways from education into employment and to reduce barriers to learning, for example by using new forms of pedagogy and assessment.

Another pressure on VET systems arises from changes in labour mobility and the expectation that they should deliver international recognition of skills including the recognition of formal, informal and non-formal learning. At European level, though not necessarily among all Member States, there is a commitment to increase mobility of learners across country boundaries. This would need more legible VET systems (Bouder et al., 2008), and encourages States to build education and qualification structures that are consistent with other Member States. The adoption of a EQF at European level is designed to ease the connection of one national qualifications system with another, without superseding national systems. Section 4 will take an open and questioning view of EQF developments.

Technological innovation and the global spread of communications technologies are creating a pressure for countries to utilise the most modern methods of production and service provision. The move towards advanced production systems and modern working organisations – and the potential for rising unemployment rates – brings with it a need for enhanced training and retraining in the use of new technologies and digital literacy. This means qualifications systems need to adapt to allow the recognition of new knowledge, skills and wider competences related to the use of new technologies.

Economic needs are perceived to drive innovation in production. Research shows that innovation often takes place via continuous learning on the part of people in the workplace and that forms of learning in the workplace are changing; for example, there is increasing effort to organise learning on-the-job and utilise self-directed learning. Thus, learning

structures in the workplace are becoming more complex. In particular, the focus is no longer solely on acquisition of technical knowledge but has widened to include softer skills, new values, new codes of behaviour and the remodelling of past experience. Social and cultural issues are not divorced from economic, demographic and immigration issues facing all Member States. It is generally recognised that people engage in learning for economic reasons such as to improve employment prospects and for personal development and social reasons – social status, better citizenship, and so on. These pressures also include a perception of the need to broaden current provision of education to include such aspects as values, behaviour and citizenship and pressure to offer learners more choice and more flexible ways of gaining credit for their learning; the need to recognise informal and non-formal learning also falls into this category.

The pressure to develop learning opportunities means that, in many countries, providers are now challenged to differentiate course offerings in response to increased demands from employers and changing needs and expectations of learners. This pressure has had a strong impact on the growing amount of VET provision at post-secondary and higher education level in many countries over recent years. This demand is expected to grow as lifelong learning provision expands and develops the need for even more learning (Leney et al., 2004).

Developing VET as part of lifelong learning requires examination of the provision structure including the links between working life, schools and higher education, including the content of programmes, the quality and relevance of provision, resource provision and management as well as the roles and responsibilities of different partners and stakeholders. Current lifelong learning discourse accepts that there is an argument allowing scope for lifelong learning goals to shape the way the education and training system works. The OECD study referred to above suggests that stronger links are needed between learning at different stages of life and between formal and informal structures. It also identifies that more diverse settings for learning will be needed and different partnerships between funding sources, providers and qualification bodies will be needed to lead to more integrated provision (Coles and Werquin, 2004). This will call for substantial further research, and reform in most countries (Section 3).

All of these pressures on VET systems are common to many countries and might be expected to add impetus to their reform agendas. It is probably not the case that common pressures would lead to common responses through reform. However, scenarios for future governance developing in practice can be expected to provide direction in terms of voluntary cooperation, coherent responses to common drivers, or perhaps a greater degree of harmonisation than we currently see in the Lisbon programmes. The country or regional context will require bespoke solutions. The elements of changing VET infrastructure might be expected to show some commonality and the change itself could have features that are created through policy learning from reforms and trials in other countries and regions.

3. Future governance of VET

3.1. National/supranational/international dynamics; the four futures of Europe

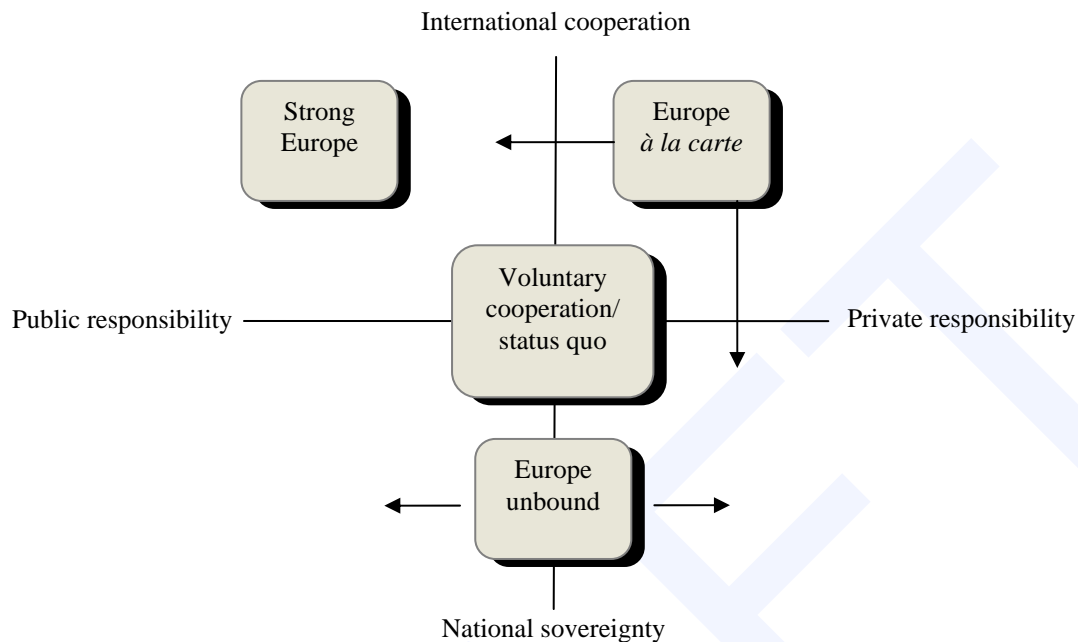
To anticipate new calls that may impact upon European VET research and development, we need some picture of the prevalent national, supranational and international environments. As is so often the case in the developments described in this paper, the future is characterised significantly by uncertainties, not least as we try to define the policy environment in which EU education and training programmes may develop over the next 5-15 years. A single prediction about policy development on this timescale is difficult to call, but a series of scenarios can usefully describe a range of plausible outcomes. In each case we can assume the OMC will continue to be the adopted policy tool, at least for several years into the future, though with rather different results and opening up different outcomes. Drawing on previous work by de Mooij and Tang (2003), EIU (2005) and Sellin (2002), we explore four scenarios for VET and lifelong learning strategies in Europe:

- (a) strong Europe: a series of Bologna-style agreements between Member States and the EU provide a strong policy steer and impact;
- (b) *Europe à la carte*: formal development of lifelong learning policies, including VET, at European level. But a two-track Europe with some Member States signing up and others preferring to follow their own course;
- (c) voluntary cooperation continues at EU level, with most Member States and stakeholders showing continuing goodwill and seeking positive learning outcomes from peer learning;
- (d) EU unbound: Member States decide on and drive through their own reforms with little reference to Europe. Voluntary cooperation tends to be minimalist and is often regional rather than European in character.

The scenarios hinge on the balance between two sets of variables. First, the extent to which international, or rather European, governance is influential, as against the role taken by national authorities. For the foreseeable future, subsidiarity remains a dominant principle in particular for education and training, yet who knows whether this will still be the case in the longer view? Second, the extent to which public responsibility is to the forefront of the agenda, as against the extent to which private sector or individual interests dominate. While not identical, the second of these poles can be expected to reflect differences in the priorities attached to the economic and social aspects of VET.

To stimulate debate about future directions of European governance for education and training, the axes can be shown graphically and plausible scenarios plotted on them.

Figure 2: Plausible scenarios for VET governance (2010-20)



Notes to diagram:

Europe à la carte: the arrows indicate the likely broad direction of policy-making in Member States. Those 'opting in' to European initiatives will tend to move closer to the strong Europe scenario, with strong EU participation. Those remaining independent of these developments will retain greater national sovereignty over policy-making.

Europe unbound: the arrows indicate the different directions taken by Member States. Individual countries will become more divergent in the absence of common supranational governance mechanisms.

Now we can flesh out the scenarios a little.

Strong Europe

EU is gaining more robust VET competence. The Bologna process is widely regarded as a successful initiative. Subsidiarity is modified in practice by Bologna-type, binding agreements between Member States and the European Commission ⁽¹⁾. The EU is moving through consensus towards developing more harmonised approach to education and training, with support from key stakeholders. A strong Europe scenario could be identified by the following characteristics:

- (a) more robust European administration and stronger policy institutions, Brussels-based strategy tends to guide national development and reform programmes along more internationally harmonised lines;

⁽¹⁾ In this scenario, for example, EQF will have shifted from the 'meta-framework' approach, which is not currently intended to be a harmonising tool, towards a set of steps and stages that would create a harmonised framework.

- (b) increased funding for cooperation provided by EU budget;
- (c) a stronger relationship between Member States' institutions and EU policy instruments.

Europe à la carte

EU successfully formulates forward-looking VET policies as part of lifelong learning strategy. Most EU-10 and some EU-15 Member States adopt approaches derived from stronger European guidelines. However, some countries and stakeholders resist or ignore common approaches, preferring to retain strong independent control. *Europe à la carte* could display the following aspects:

- (a) EU develops clear policy and implementation guidelines, which remain voluntary;
- (b) optional 'pick and mix' relationship between EU and Member States developments, depending on national circumstances;
- (c) two-speed system allows Member States to accept or decline 'deeper' EU influence;
- (d) the Commission uses structural funds and lifelong learning funding as incentives. Those opting for cooperation tend to benefit from increased EU funding. Those rejecting the strategy rely on more alternative, private sources of funding.

Voluntary cooperation

The status quo from the mid 2000s continues, with enhanced voluntary cooperation between Member States, involving closely the social partners for VET developments – with greater or lesser success. While the European Commission is taking a coordinating role, subsidiarity is observed and championed strongly by most Member States and stakeholders. The European Commission seems comfortable to work within these parameters for future education and training work programmes:

- (a) EU continues to set ambitious targets and benchmarks;
- (b) much is learned from the early phases of peer learning between Member States and stakeholders, yet countries are progressing towards new objective at different speeds, causing tension between high performing and low performing nations;
- (c) social partners and other stakeholders have an innovative role;
- (d) gently increasing funding at European level, distributed equitably between Member States.

Europe unbound

Political and social upheavals in key Member States and at European level lead to a drawing back of the European programme. Possibly linked to the decline of the European social model. Member States retain responsibility for their own strategy towards individual economic and social goals for lifelong learning and VET. Cooperation may occur at a more regional rather than EU level:

- (a) struggle for legitimacy at EU level for policy positions and programmes, particularly the European social model;
- (b) slow progress and consensus difficult to achieve;
- (c) aspects of regional and sectoral cooperation remain encouraging;
- (d) limited dispersal of funds at EU level for lifelong learning, though some funding continues to be earmarked for VET funding, especially mobility;
- (e) Europe unbound may be characterised by self-protective State activity, or by unregulated, free market mechanisms.

3.2. Implications for VET governance

Voluntary cooperation appears to be the most conceivable modus operandi at present through the OMC, but this may of course change over the next 10 to 15 years or longer. We can anticipate that the outcome will be influenced by two sets of developments, which can be summed up by the following questions:

- (a) in 2010, has the education and training 2010 work programme reached several of the main goals, or is it at least on course at sufficient speed to do so?
- (b) which of the scenarios outlined above for governance of the European project for lifelong learning is prevailing?

If sufficient progress is being made, then the OMC is likely to remain, by consensus, the preferred methodology with the status quo being maintained. However, if this is not the case, there are likely to be pressures by 2010 to either revise OMC or to move to a stronger form of coordination. Pressure may come from stakeholders in education and training; equally it may come from communities that take responsibility for economic or employment strategies, or innovation, or perhaps social inclusion. A variant model already exists in lifelong learning: the Bologna process is now rapidly harmonising the structure and duration of higher education degrees across the EU and a wider group of linked countries. Here there is voluntary cooperation in the part of partners who sign up to the agreement. There is no EU directive, but the voluntary agreement is perceived as binding and does have the force, but not the legal status, of a mandate. In effect, the Bologna process has extended governance options open under voluntary cooperation within Europe.

In the voluntary cooperation scenario, there is a suggestion that the status quo is maintained, and at least reasonable success of the OMC and peer learning continues. Stakeholders in VET see sufficient merit to continue active participation with the process. Key successes, for example in reducing early school leaving and raising workplace training participation will satisfy both VET stakeholders and policy communities beyond the education and training realm. In this case, the OMC, which is not subject to thorough research or evaluation, does not become problematic as a means of governance, because it is seen as delivering its

objectives. The efficiency of the tool may be explored further, but not its overall effectiveness.

However, in the event of delivery failure, this scenario would lead to greater scrutiny of both national and European reform policies and the usefulness of OMC and peer learning as a governance tool for future development. While some of the EU mechanisms such as EQF are developing rapidly, others – in particular achieving priority indicators such as reaching targets for participation in adult training, gender balance and retaining older workers in employment – are not being achieved. In this case, other scenarios may come in to play.

The strong Europe scenario would be one response designed to tackle insufficient progress towards key VET targets. Key players could be from within the education and training field and/or the wider economic and policy-making fields. The development of Bologna-style agreements becomes a more prominent feature of the European lifelong learning environment. This certainly also derives from a move towards a ‘deeper’ Europe, in which the policy follows a more harmonising agenda, which for VET might have strong implications for EQF and ECVET system.

Similarly, the development for VET of a Europe *à la carte* scenario would imply strong European frameworks, but rather different methods of implementation. However, the Europe unbound scenario suggests a weaker role for European VET governance, which becomes very much secondary to national developments, or global/local-market mechanisms.

It is curious that VET research is paying little attention to the modes of governance operating at EU level for the field. A notable exception is a recent paper by Roger Dale (2005). Dale distinguishes between the concepts of government and governance, concluding that the governing is no longer the exclusive preserve of the State. According to Dale, ‘[...] the OMC processes seem likely to have a depoliticising effect. In addition to the national tactical (blame-shifting) advantages the OMC may foster, more fundamentally it makes policy-decisions into technical matters for long-term negotiation between de-nationalised/supranational experts, rather than national preferences that have to be defended nationally. In this way it displaces immediate problems, both temporally and spatially; it extends the time horizon over which they are to be addressed and removes the locus of decision to another place. This also makes education policy-making at EU level a matter for technical problem solving between stakeholders within the system, rather than the result of the political resolution of the political conflicts between different interests. Further, the process will tend to converge around the economic interests of the already strong, rather than around their own or anyone else’s political priorities. Finally the OMC will tend to operate on the basis of proscription rather than prescription; that is to say, it will tend to patrol the boundaries of the possible rather than defining precisely what the territory thus defined should contain’ (Dale, 2005).

Future uncertainties that scenarios can help to reveal and the relatively small amount of attention paid to governance as a research issue means that VET governance at European level should be an important area for future VET research.

Similarly, the quantity and nature of cooperation between different Member State ministries responsible for VET should receive more concentrated attention in research, as should developing closer working practice between European Commission Directorates. Joined-up policy-making for VET is a key to successful innovation, but the field remains under-researched.

4. Uncertain economic and labour-market environments

This section addresses some transversal research issues in the relationship between VET and the labour market. These raise issues that we consider of key importance for future research in VET. The areas we consider in this part of our report are:

- (a) the effects on VET of uncertain economic and labour-market environments,
- (b) the concept and recognition of competences,
- (c) the attractiveness of VET supply.

Our starting point is the EDEX study *Education expansion and labour market*, (Béduwé and Planas, 2003), the associated research, and subsequent studies on the same theme (Germe et al., 2003; Béduwé and Germe, 2004; Mercado and Planas, 2005). We bring to light the issues, whether currently present or not, that we consider will be important beyond 2010 and which call for deeper research work.

4.1. What do we mean by uncertainty?

It is widely agreed that modern economies need flexibility in terms of markets, organisations and companies, while technologies develop rapidly and are permanently changing. This creates a high uncertainty in both economic and social processes. One consequence is that economic agents – including companies, managers, employees, investors and the State – now have to plan in a more uncertain environment, about which less is known in advance and in which forecasting is less easy than in the steady state developments that appeared to characterise earlier periods. Further, unanticipated events occur, as evidenced frequently in the energy sector. This uncertainty has an impact on major aspects of vocational training. The investment in training by individuals and by organisations carries more risks, while planning for the development of skills and qualifications has become more complex. Nor are pathways for access to employment via vocational training necessarily reliable. A key argument that underpins the analysis in this paper is that uncertainty is now an important constant factor in the fields associated with labour market and VET research. As we will indicate, the challenge of managing uncertainties brings both opportunities and risks. A key task for VET research is, therefore, how we can plan for uncertainty, as an increasing and unavoidable factor, in anticipating VET skills needs and supply for future labour markets. Uncertainty takes on several dimensions, some of which we will now identify.

4.2. Increases in employment and labour-market risks

Some risks have long been associated with the labour market and paid employment and, historically, countries have gradually tried to limit or compensate for these. These risks are well known, and include unemployment, illness, old age and poverty; they form the basis for social security measures. Current economic developments increase certain risks for groups of employees: the likelihood of becoming unemployed, the risk of seeing qualifications losing their value and becoming obsolete, the risk of labour-market exclusion and risks related to a diminishing access to employment, etc. Often, these changes bring opportunities, such as the opportunity to change to another economic sector or industry. Choices made by young people and employees on the development of their qualifications, which often means their choices of vocational training, are subject to this uncertainty. Making sound choices is often difficult and individual's choices do not guarantee, for example, chosen training will have value in the labour market.

4.3. Shorter time frames for choices and actions in the labour market

Uncertainty also means that individuals, companies and organisations have a shortened time frame for their choices and actions. As we already showed, some key aspects of the future are unpredictable, making confident forecasting difficult. A consequence of increasing uncertainties is a shorter horizon for action planning. The increase in uncertainty means individuals and public institutions decisions – for example in public policies for qualification development – have to be made with a limited knowledge of possible consequences, and tend to result in placing more emphasis on quick results over a short time span. If labour-market conditions and the development of qualifications are more difficult to anticipate, this also implies that individuals develop projects, based on their own qualification, only on a shorter-time scale: the more these are long-term projects, the more they become risky.

4.4. Decreasing durability of existing practices in the regulation of employment and training

The articulation between employment and training systems has specific characteristics for each country. These are based on specific aspects of the regulation of labour markets including training and conditions of access to employment, which depend on benchmarks common to both companies and individuals, on rules or standards linking qualifications and employment through legitimised nomenclature, classifications, systems, etc. These factors are expected to reduce uncertainty for the economic agents. They help agents to make their choices, confident that they understand their environments clearly. For example, the choice of a specific professional training will guarantee access to a certain category of employment. Benchmarks necessary for the labour market to function – job titles, diplomas, classifications

– seem now to be less effective than in the past to secure a good match between job vacancies and job applications in the labour market, particularly relating to future needs. Thus, one of the forms that uncertainty takes for stakeholders is in the fact that mechanisms for market regulation and ways of accessing employment are changing rapidly, and information and guidance provision for employers and learners is often not up to date or easy to synchronise.

4.5. Uncertainty caused by changes in labour-market demand

Today, labour-market demand is perceived as unpredictable for two main reasons. First, demand is subject to increasing fluctuations; this contributes to greater insecurity of employment and makes the development of both skills profiles and qualifications more difficult to describe and forecast (CERC, 2005). Second, this evolution is accompanied by a decline of traditional collective forms of work organisation, simultaneously giving more importance to individual initiative (a kind of entrepreneurial approach to careers) in the professional trajectory of the employee. We note, however, that some recent powerful analysis suggests the emergence of new collective forms of work organisation, following the adoption of new working methods (Falzon, 2004). Thus, important developments are under way in the work organisation, affecting the articulation between the individual and the collective and which, in turn, creates uncertainty about competences needed by individuals in employment.

4.6. Contradictions in labour-market demand and job security

A perceived increase in labour-market uncertainty is shared widely across working populations in Member States, even if there are strong differences between countries. The perception of a strong degree of job insecurity does not necessarily correlate with the measured insecurity of employment in different countries. This aspect is still subject to debate, and data available are rather contradictory. It has been shown, for example, that the trend is for a growth of long-term employment in companies in most industrialised countries (Auer and Cazes, 2002). However, the development of short-term contracts and unemployment is a demonstrable reality, particularly for the least qualified and for recent labour-market entrants and probably also for older and other more marginalised workers. It is this development that has probably led to a feeling of insecurity for large numbers of people in work. The dimension of uncertainty related to the labour-market demand weighs on judgements of individuals about vocational training. Young people, in particular, may consider vocational training according to its capacity, perceived or real, to protect them from unemployment and also from job insecurity. This is a hypothesis whose accuracy and implications certainly merits further research, not least because of the changes in VET supply that are implied.

4.7. Complexity of qualifications development and uncertainties about the definition of job profiles

With the transformation of work organisation, new jobs are emerging whose contours and characteristics prove to be difficult to describe, unlike many traditional job profiles. Often the growth of tertiary employment has created professional activities that do not fit neatly into traditional ways of defining qualifications. The increased importance of indefinite contracts as part of employment has a major impact on the labour market, whether in terms of recruitment, vocational guidance, or the role of VET in access to employment. Traditional ways of characterising and cataloguing jobs are less and less adequate to the task of reflecting the reality of professional activity. Organising vocational training for these activities is difficult, as is anticipating how qualifications should evolve.

The future shape that employment and qualifications should take becomes more difficult to anticipate both for individuals and for companies, and this creates an uncertainty that economic agents must take notice of. At the same time, achieving an effective articulation between VET and employment (which qualifications to obtain which employment?) becomes a question that is difficult to answer for training providers and for policy-makers, as well as for the other stakeholders in VET.

Uncertainty is closely linked to the obsolescence of the previous signposts linking the training and labour markets, in particular those that give shape to VET pathways, provide access to training and employment, and which link to the construction of the professional career paths on the part of individuals. For this reason opportunities offered by different kinds of education and training are more and more difficult for individuals to anticipate. Faced with this difficulty, agents can make as a rational choice of their vocational training by chance. That explains the case of the, relatively often, variations of the individual's VET fields choices.

4.8. Increasing the collective dimension of work and competences

The decline of recognised trades and professions as a collective form of labour-market organisation and training is often characterised as an individualisation of labour-market operations. The collective dimensions – as evidenced in classifications and agreements at company and branch level leading to access to employment through well identified pathways of VET – have a reduced role as the regulation of the labour market has changed. One aspect of these changes is a decreasing value of benchmarks common to employers, employees and labour-market intermediaries – such as job titles, profiles, names (titles) and the content of qualifications. Companies tend to value qualities in their workers that are, in some respects, poorly identified in qualifications or in employees' job titles. This motivates companies to set up individualised forms of employee skills and competence evaluation, to compensate for the loss of confidence in traditional signals contained in employment titles, diplomas, etc.

However, it would be a mistake to conclude that collective dimension of work is about to disappear from modern work organisation. The collective dimension of work practices is, rather, changing. This can be shown by referring to ‘distributed and asynchronous’ forms of production and the development of demanding practices of deliberative confrontation found in modern and highly technical work organisation, in which collective activity functions to ensure the validity and robustness of solutions to problems work organisation has to confront. Collective competence is thus collectively built into action, developed through practice, and does not equate simply to the sum of individual competences. The collective forms of work management and employment in many modern companies, and across a wide spectrum of the labour market, have adapted to these transformations of the collective dimension of work. They give place today to the development of new structures (for example, communities of practices gathered around a common objective of production, which might for instance be the development of free or shared software). However, these new working methods are not wide or stable enough to constitute stable objectives for competence development, which could in turn be transmitted within frameworks of vocational training. Yet, these forms of organisation will probably be of key importance in the future. They give an idea of what can be called work organisation based on competence and knowledge.

4.9. Emerging questions on the relationship between work, careers and social organisation

A strong requirement of modern economies is the capacity of individuals to develop individual and social resources to acquire competences within their work environment and from wider contexts throughout various stages of their working lives. Workers learn, adapt, and build on their personal and professional trajectories in connection with the development of their work organisation. The increase in specific risks and uncertainties, the loss of effectiveness of collective membership such as through trade unions, professional bodies or companies, the new requirements of work in terms of autonomy and taking initiative, the diversification of life and work trajectories, all help to explain this change.

However, main stakeholders in governance at European level cannot simply accept this situation. It is part of their governance role to develop collective frameworks that support individual action through a strategic approach that combines a range of public policies, including policies for lifelong learning and VET. Traditional questions asked by human and social sciences on the interface between individual choices and collective frameworks have to be revisited. New research and policy questions are emerging, around three main topics that straddle the economic and social aspect of VET policy:

- (a) work organisation: how can we adapt work organisation to ease competence acquisition and insertion of people with different capabilities?

- (b) career trajectories: how will individuals make choices during their learning careers and throughout professional life? What resources help individuals to control their career trajectory, and under which conditions?
- (c) social organisation and individual choices: how can individuals be supported in making their career choices and decisions and in their working activity? Which public and collective resources, including modes of VET provision, can work best under these conditions?

4.10. A crisis of the *métier* (*Beruf*; trade or profession) and diploma – central to the relationship between VET and employment

The reciprocal relationship between training levels and employment entry and progression has been sustained normatively, in a range of European national systems, through the concept of trade, profession, *métier*, *Beruf*, etc. However, these reciprocal relationships, while commonly accepted, do not provide an effective general explanation of the relationship between VET and employment in the labour market (Béduwé et al., 2005), nor do they often provide a ready correspondence between holding a qualification and improved access to employment (Bruyère and Lemistre, 2005). Besides, important as they are in forming professional identities, they are often not a conclusive basis for linking future skills needs and training provision (Lassnigg, 2002).

The relationship between training and employment is brought into question by changing patterns of employment, increasing uncertainty in VET systems and markets. The correspondence between VET qualification levels and employment levels in France is likely to become more difficult to maintain. Similarly, the German model of initial vocational education and training (IVET) would be less well adapted to a strong degree of labour-market uncertainty, because of strong formal ties established between training and employment. Several current developments can be seen as a response to this trend. These include: modified approaches to job and training needs analysis; the deconstruction of the traditional categories of qualification; re-conceptualising professional activities using Lego-like banks for constructing competences; the development of new tools and management practices in companies. In short, the new competence-based approaches work in a critical way to challenge existing, normatively supported relationships between VET and employment, which have been based on a correspondence between qualification/diploma and *métier/Beruf/trade*. These innovations also lead to the construction of new ways of evaluating people at work, based on a particular conception of an acting subject, for instance one who keeps competences up to date, ensures employability, and is concerned with transversal cognitive capacities needed for professional activities in rather unpredictable labour markets.

VET and associated qualifications occupy a central place in these developments. New diplomas, certification systems and pathways are being developed and tested. It is important

that VET research informs these developments, and also attempts to understand and explain the new paradigms. The task for future VET research is to develop an understanding of the new relationships between VET and employment that are emerging, how individuals may make choices about their careers and labour-market positions, and of new forms of collective activity that may emerge.

4.11. Managing diachronic trends of supply and demand in the labour market

Transformations in European and global labour markets and across the range of work organisation are far from complete or stable. Reforms of VET systems and markets, and the associated modes of access to employment, are also in a state of flux. The diachronic trends referred to in the title above suggest historical movement, with the implication that trends in labour-market demand and supply are not easy to synchronise.

Questions of qualification or competence requirements tend to elicit different answers, depending on the time frame used. The changes effect taking place in connection with the globalisation is that decisions related to the production, circulation and accumulation of capital are governed by short-term priorities, whereas decisions related to human and social skills and reproduction demand a long-term, or indeed ultra-long term, perspective (Vinokur, 1999). Diachronic mismatch between the supply and demand for qualifications and skills is a common feature in European and world labour markets. The time frame is an important factor in the relationship between the demand for skills and supply. It delimits the period needed for the development of qualifications and acquisition of skills, as well as their useful lifespan. At the same time, it is used to define the boundaries of forward planning, and hence is a unit of economic measurement. The management of this diachronic trends needs be placed in the lifelong learning framework rebalancing the weight of the different kinds of formal and informal opportunities through VET, developing the model of the competences production as indicate in a following point.

4.12. Changes in the models of competence production and rebalancing the importance of IVET and CVT

For a long time, systems of IVET provision were the dominant model of skills development in European systems. In the past two decades, raising education attainment has been achieved in large measure through the expansion of IVET. Recently, however, increasing uncertainty about the effectiveness of traditional approaches and the associated shift to competence-led approaches is leading to major reforms of IVET systems in Europe, no matter which IVET model has dominated in particular countries.

Development of VET systems may take several directions in the years ahead. First, the distinctions between initial and post-initial training and continuing vocational training (CVT) may become blurred, leading to a rebalancing of investment in vocational training to the benefit of training throughout active life. Instead of being seen as alternatives, initial and continuous vocational training would become then interchangeable (Gauron, 2000). A second approach is to give greater priority to experience, and develop systems for the development and recognition of individuals' competences acquired in practice.

This observation shows that competence-based models are still at a developmental stage. It also seems that we are observing the development of a greater variety on the demand side for education and training, with young people and others wanting to choose at any time 'such-and-such a type' of training, extension of studies. Their choices consider anticipated skills gaps and shortages, and also trying to minimise the perceived risks of unemployment associated with certain categories of qualification. We can also note a growth in the investment and returns involved in employment and training, which shows the limits of VET systems organised largely around IVET provision.

These developments tend to result in more complex approaches to VET, encouraging both experimentation and placing more emphasis on the recognition of informal and non-formal learning.

4.13. Strategies of individuals to increase their capabilities amid uncertainty

In an uncertain environment the ability of the learner and worker to build their own professional pathway becomes crucial. Amartya Sen's 'capabilities' approach has the potential to develop this line of analysis. The approach was devised in 1985 (Sen, 1985) and developed more recently by other authors (Salais, 2005). The approach promises, both at national and European levels (Salais and Villeneuve, 2005), a helpful and innovative perspective on the reform of VET pathways. In brief, the approach highlights the capacities needed by citizens and workers to achieve the economic development of the societies they live in – and those needed for their own personal and career development – are greater than the capacities they need for work, and strongly related to their freedom of choice. The capability concept thus encompasses people's capacity to build up their own life, work and education strategies, based on their own freely chosen goals.

Taking inspiration from the work of Amartya Sen, this theory focuses on the active freedom people need to achieve their goals in life and work. This concept relates to Castell's approach to the self-regulated worker (Castells, 2000) and connects with the main issues discussed in this section, such as the management of uncertainty and people's optimal use of VET provision. As with the idea of the empowered learner, developed in Section 6, the concept of capability returns the active social actor to centre stage. Salais' revival of the concept of capabilities shows that it is not enough to develop rights and resources accessible to

individuals (VET programmes, recognition and validation programmes, etc.) to enable them to face the uncertainties of the labour market. What is called for is a strategy for developing capabilities – the effective capacity of individuals to access available resources and to use them in a relevant way. We will take up this theme again in Section 6, by introducing the concept of the expert learner, and suggest some of the opportunities and challenges this poses for innovative VET teaching and learning, and for VET research.

Box 1: Individual strategies for labour-market risk management

Minimise risks, by selecting safer choices in the labour market

A way of reducing the risks emanating from labour-market uncertainties is for individuals to choose training leading to the most secure and steady forms of employment. This assumes the information on training pathways and careers is reliable and comprehensible. Information and guidance in changing labour-market and training situations, the development of useful signposts and the way that these are used by individuals in their choices and careers are in themselves an interesting area for further research. These are closely linked to systems of accreditation and ranking at all levels from upper secondary VET to postgraduate training, MBAs, etc.

Insure against risks in advance

Whether or not they prove to be effective, we can see insurance against risks as a common response of young learners and people at work. Examples include the following. To protect against the risks of downgrading and unemployment, prolonging the period of education and training is an insurance that improves the level of qualification (extra years, for example, or a more advanced degree). People often anticipate recruitment practices in which a qualifications drift took place, whereby companies expect to take on people who are overqualified for the job. Another insurance consists in multiple qualifications, ensuring a diversification of qualification profile, for example through double qualification. In practice, some young people complete a considerable number of training courses, hoping to have a flexible range of labour-market entry and progression possibilities. Similarly, some build up an impressive CVT profile, with a view to impressing employers and being able to show they have developed a wide range of skills and competences.

Adapt to risks

The adaptation to the risk approach is illustrated through the behaviours of young people choosing to adopt a more adaptable (or opportunist) attitude, frequently changing employment tactic and area, often taking new training courses linked to developing areas of employment. This is seen as a better option than long-term VET projects. Often these young people delay their choices for as long as possible and prefer short training courses. Another form of adaptation to risks might be patterns of volatile and changing behaviour of individuals who treat the labour market as dubious and unpredictable, seeing it as useless or absurd to choose a steady course of skills acquisition, preferring to work on short-term projects or outside the formal field of employment or self-employment.

Use of IVET/CVT to overcome labour market risks

This involves making best use of both ICVT and CVT (as well as other mechanisms available, such as best use of career planning and guidance) to respond to change and uncertainty with a broad portfolio of certified skills, analogous to the contents of a traveller's chest. At each stage, the individual maximises their employment assets, as way of building protection, progressively, against the risks. Even if the individual is currently protected against uncertainties of the labour market, they have a careful eye for developing the professional profile, by increasing skills and competences – capabilities in the sense used earlier. This strategy accentuates the role of intermediaries in the labour market, such as guidance and career counselling.

Here, we look at the impact that changes and uncertainties in the labour market may have on individual orientations to VET, particularly when these are linked to changing individual lifestyles and preferences.

Many individuals in modern labour markets are faced with contradictory demands. They are encouraged to develop a long-term training and development project as fits the idea of a professional, while they are encouraged to be flexible, to adapt themselves to the labour market and employment trends, maintaining their employability. Individuals thus develop a range of behaviours to cope with uncertainty. The time scales given to their actions are often shorter, frequently leading to short-term planning. Indeed, in the face of multiple uncertainties of the labour market, developing long-term career projects is not always adaptive behaviour. Individuals develop new strategies of adaptation to uncertainty, which are not always easy to understand. These strategies are fertile ground for further research, since they will impact on the learning and working situations individuals opt for. These strategies do not yet figure prominently as a subject of VET research. To generate debate, we have formulated strategies, (set out in Box 1) that young people may use.

It is this interplay between new uncertainties in labour-market demand and supply and the active, adaptive orientations of actors (here we looked at learners and working individuals) that form a new, dynamic field of VET research appropriate to the new paradigms.

5. Competence: notion and recognition

It is clearly the case that concepts of competence in labour-market relationships and regulation are central to the current developments taking place at national and European levels. The notion of competence helps us to analyse the complexities of economic change and the development of labour-markets and work organisation, as described in the previous section.

5.1. Why the notion of competence?

The notion of competence is an important tool that helps to analyse and understand the increasing complexity of education and training pathways for young people and adults. It is at the core of most approaches to lifelong learning and is useful for international and intergenerational comparative analysis. Accepting that the people can acquire the same competences by different ways, it allows us to understand how the active population from countries with different VET systems and thus formal qualifications, has been able to acquire the necessary competences to produce similar and competitive goods. It sheds light on intergenerational competition, for instance how generations with different education and training opportunities have been able to compete in the labour market. In summary, a competence-based approach allows us to understand how people perform to a certain level or standard, irrespective of educational background, or how they acquired their skills.

In several ways, information on workers' competences is already – and certainly will be in the future – a key issue for the performance of the European labour market.

5.2. The place of competences in labour-market information and regulation

The subject of competences and their management has been widely explored in research (e.g. Descy and Tessaring, 2001). However, there are still major gaps in our understanding and analysing the management of competences is often like shooting at a moving target.

The starting point is simple:

The development of work organisation, not least the rapid development of service industries, makes the performance of people at work dependant on factors other than the purely technical ones. These more individual qualities add value to knowledge and know-how, support problem solving and developmental activity, all of which are factors that are difficult to acquire and to identify.

This broadening of the spectrum of individual qualities to be considered in measuring performance has been accompanied by an unprecedented development of investment in and thus in the duration of education. These investments, directed so far mainly at initial and higher education, also receive strong encouragement from lifelong learning developments, not only through formal modes of education and training, but also through a new emphasis on informal learning. Continuing training and informal learning seem set to adapt and to develop rapidly in terms of both techniques and organisation, in the labour-market and workplace context.

The development of the concept of competences has been followed by attempts to measure and signal capabilities people possess and need for the labour market,.

The importance taken by competences has an impact on many aspects of the labour market, such as recruitment, human resource, career management, and an impact on the demand for and supply of training.

The concept of competence and its recognition is at the heart of the relationship between VET qualifications and the labour market. VET qualifications are tools for the labour market in so far as they provide reliable and legitimate information on workers' competences. The competence-based approach runs a risk of reducing the weight of what was previously considered to be at the heart of people's qualifications – their knowledge and know-how; emphasising instead only the directly observable aspects included in work performance. This is the case when knowledge is not updated steadily through CVT and often increases pressures for more training for older generations of people who did not benefit from the recent rise in levels of the education. This leads to a questioning of traditional models of skills acquisition and lays greater importance on the role of experience, at the expense of formal school-based education. Thus, the question of competence is at the heart of developments in both IVET and CVT.

Competences form a central theme for all prospective research in VET. It is pertinent to ask to what extent the main reforms of VET systems in Europe will be implemented on the 2010 time frame. Two questions arise. The first concerns the concept of competence. The second question is about the methodology, which is linked to the concept, for identifying and recognising competences, and for developing elements of a recognition system to show and record individuals' competences in the labour market.

5.3. Different notions and approaches to competence

Many definitions of competences and skills exist. The most important aspects, for present purposes, concern the relationship between individual competences and their use in education and training systems and in the labour market. There is a strong debate on the concept of competence, in which the DeSeCo (OECD, 2002) programme constitutes one of the main international elements. However, as Winterton et al. (2006) indicates, the theoretical debate

and its outcome will have important implications for future VET policies. We concentrate here on the competences concept and their practical development.

5.4. The development of the notion of competences

If we take as a starting point the notion of competences used in EDEX, we can observe the development of the concept taking rather different directions:

- (a) following the definition and approach used in EDEX: competence is seen as a vector of individuals' skills and attributes, and labour-market relations are based on competences (Béduwé and Planas, 2003);
- (b) using an adaptationist approach/definition: competences (and related skills) can be translated as a result of an appropriate formal learning and adapted to a specific professional area (Kirsch, *forthcoming*). By this we mean the concept of competence is strongly associated with the concept of profession as a stable set of broad-based skills and aptitudes needed for particular jobs. Competences thus become the bridge between VET programmes and qualifications. This notion of knowledge, skills and competences is a strong component in the development of national qualifications frameworks (NQFs).

The concept of competence used by the EDEX project had been the most frequently used definition in socioeconomic research. This can be summarised as follows: An individual's overall competences are vectorial, comprising a series of basic skills. Each individual possesses a vector specific to him or her, which is probably unique if it is defined in sufficient detail. It cannot be expressed solely in terms of qualifications. This is sometime described as the 'genuine' approach.

If competences are seen as a vector of individual characteristics, this means they can be acquired in different ways and various places. Each element of the vector may be acquired through different channels; explicit education (qualifications); implicit education (experience, on-the-job training, learning by doing, etc.); non-occupational social activities; or it may even be innate (or acquired early on through primary socialisation). All elements may be acquired in any way, but there are easier, more natural and more likely ways of acquiring some of them, depending on how the education system is organised and what is learnt through work. Competences can be acquired through a combination of these methods.

A vector of competences may thus be acquired in various ways, and may be possessed by individuals with different educational and occupational histories. These differences may relate to when certain skills were acquired (when first starting work, or during the course of the individual's career), to how they were acquired (implicit education or explicit education), to the time taken to acquire them, and of course to the broader economic circumstances of different generations' careers.

As a general rule, workers do not use all their competences in any one job. Competences are of value in specific jobs, and even in specific working situations. Individual competence will be used as called for by the work situation. There is no intrinsic (absolute) set of competences. Whether competences are relevant (productive) will depend on the circumstances in which the job is performed ⁽²⁾.

Last, the vectorial dimension of competence, the combined value of the component elements, and the multiplicity of working situations in which they are exercised, make it difficult to determine productive performance *ex ante*. In any recruitment, the employer will primarily be looking for signals of applicants' potential productivity. In any case, following this notion of competence, we cannot identify individuals' competences with reference to qualifications achieved through IVET.

In the adaptationist approach competences (and related skills) are not linked to individuals and their global behaviours but to formal educational cycles, which are carefully defined in advance. The notion of competences has been redefined (metabolised) as the necessary result of an educational cycle. The result of the educational cycle is related to specific qualifications found within the particular NQF.

Moving away from the genuine notion of competences that aimed to capture capacities of people independently of means and place of acquisition, the adaptationist approach aims expressly to link the acquisition of competences to fragments of specific education cycles and to authenticate the acquisition of competences through credits or qualifications, in return for the partial or total validation of education and training formation cycles.

This is the predominant process, for example, in the framework of European credit transfer system and in many of the developing national systems of professional qualifications. In point of fact, the dynamics of training suggest that this translation is a rather simplistic step, and that two individuals following the same training will, *de facto*, complete with rather different sets of competences.

To establish a 'soft' relation between formal educational cycles and the acquisition of competences is likely to have a positive outcome, because this step can help the educational system to give more attention to the applied aspects of knowledge and skills. In turn, this can help to develop awareness of the need to integrate a broader cognitive development, described variously as soft skills, core competences, or underpinning knowledge into IVET programmes (Keating et al., 2002), thus generating an important element for the entry to employment and for life more broadly. However, to identify competences as a result of an educational cycle is to diminish and oversimplify the complex process of acquiring competences, during the initial education period and even more so in adult and continuing education and training.

⁽²⁾ Some authors, such as de Terssac, even doubt the real existence of individual competences, or at least that these can take material form outside a collective context.

5.5. Development of the concept of competences and its relationship to VET qualifications

Paradoxically, a concept developed to show that avenues other than VET systems could be effective ways to develop competences, risks to be used as a way to provide the VET systems with a monopoly on the recognition of competences. In fact, this approach transforms competences, as they become part of formal education and training cycles.

It assumes the competences acquired by prior learning can be metabolised into educational cycles, while the formal education can by itself define as homogeneous the competences acquired by the people as they complete educational cycles. This somewhat ironic development merits further examination and critique, not least since it is embraced – often uncritically – as a common aspect of many current national qualifications systems, it is found in the development of European credit transfer system at European level and also in the Bologna process.

5.6. The methodology for recognition of competences in national qualifications frameworks (NQFs)

The genuine concept of competence formation leads to a questioning of the diploma as a signal of the capacities held by individuals, and suggests that new benchmarks to mark the competences held by the individuals are needed.

A key question that calls for further investigation is whether it is possible to use a single, holistic and homogeneous methodology to recognise all kinds of competences. This is important in relation to understanding and developing lifelong learning, which develops in different ways, at different stages of life, involving a wide range of knowledge, skills, competences, capabilities.

Among recent attempts to produce single, coherent schemes, the adaptationist approach was most frequently used in VET policies at national and European levels. The methodological impacts of this approach to competence recognition is twofold. The recognition of competences is based on a stable and holistic qualifications framework defined at each administrative level; however, each qualification in this qualifications framework is linked to a formal initial educational cycle. The main features that distinguish NQFs from other qualifications systems can be summarised as follows (Young, 2005), all qualifications are:

- (a) described in terms of a single set of criteria;
- (b) ranked on a single hierarchy of levels;
- (c) classified in terms of a single set of occupational fields;
- (d) described in terms of learning outcomes (that are expressed independently of the site, institution and form of pedagogy or curriculum);

- (e) defined in terms of elements (sometimes referred to as units or unit standards) and ascribed a volume in terms of credit expressed as notional learning hours or outcomes.

This approach is elaborate and sophisticated. It received a great deal of attention across Europe, in relation to the development of European tools such as the EQF. It is a detailed and meticulous approach based on preconceived categories of competence, which are attached to formal VET programmes. Yet, all competences may not be susceptible to reduction to single frame, and at the same time it may not be feasible to attach these to specific VET programmes, certainly not in a general framework. The effect on formal IVET is the assumption that we can describe or define individual competences of people through their VET courses and diplomas. The consequence risks becoming reductionist, and reinventing a kind of Taylorism in qualifications (a ‘box ticking’ mentality) that the introduction of the concept of competence development sought to move away from while, in reality, the acquisition and use of competences in the knowledge society calls for complexity, flexibility and ability to adapt in widely different environments.

About assessment, the move away from traditional modes of examination towards demonstrating skills and competences in more realistic – for instance, work-related – settings are a welcome development. Nevertheless, as Young observes the ‘bureaucratic procedures for the registration of qualifications can easily become a substitute for a more direct focus on quality and the assessment of specific skills and knowledge and generate a lack of confidence in the new qualifications. In the worst cases it leads to little more than ritual compliance and what has become known in the UK as “ box ticking” by providers of qualifications [...]. In relation to curriculum, in most systems teachers rely on syllabuses; however in NQF-type frameworks, they have the difficult task of converting outcomes into teaching programmes. Again research has demonstrated that the reliable generation of a syllabus from occupational standards is almost impossible’.

The conceptualisation of competences certainly calls for further investigation on the part of VET research; it is a concept that should not be taken for granted or taken as unproblematic.

5.7. Some questions on national and European qualifications frameworks (EQF)

The labour market is clearly a case of an imperfect or asymmetric information market. As neo-Keynesian economists propose for this kind of market, State intervention is needed to improve available information. This is the case in national labour markets but the need is arguably greater in the European labour market. Starting from this assumption, the question to ask is: what kinds of intervention are needed to improve information in European labour markets?

EQF was adopted as an instrument at European level. It is now entering an implementation stage, so it can be expected to have an impact on national and sectoral systems and reforms.

The development of EQF is intended to be capable of comparing and benchmarking (using a single framework) the qualifications and skills people have acquired in different national VET systems, in their occupational settings and through lifelong learning, including those acquired through experience. The purpose is to help to maximise the performance of common European labour markets, and to meet the associated needs for worker/learner mobility, geographical mobility and transparency of European education and training systems. While contributing to the development of a European education space, EQF and the associated actions are also intended to improve access for excluded individuals and groups. Yet, the development of qualifications frameworks in some European countries showed limited results so far. There is also evidence to show that new VET qualifications, developed in some countries, face difficulties in achieving intended levels of take-up and becoming effective reference points in their labour markets.

New forms and systems of VET qualifications and certification and, more broadly, changes in the ways of assessing people's competences and capabilities should remain key questions for research and impact evaluation, up to and after 2010. Again, this is a matter of theorisation and conceptual frameworks, as well as of implementation. This emphasis on further research could lead to a reinvigoration of themes such as the VET role in promoting equal opportunities and social inclusion (Bureau and Marchal, 2005).

We already problematised the concepts of competences found in some NQFs, then attached to diplomas and qualifications, and indicated how these potentially can be found in the EQF. Several related issues are unresolved and are themes for further investigation as we approach 2010, and after. Below we explore some of these issues:

- (a) transparency: the starting point is that all stakeholders (government agencies, employers, social partners, individuals) are interested in the maximum possible degree of transparency of workers' competences on the labour market; in practice, this is unlikely;
- (b) the relationship between qualifications, labour-market requirements and frameworks: there is frequently a strong tension – even a crisis – in the reciprocal relationship between employment specialisations and specialisation in IVET qualifications. Yet, the link is crucial to qualification frameworks;
- (c) EU migration and worker mobility: European citizens are showing a weaker interest than anticipated in geographical working mobility inside the EU (Eurostat, 2006b), although with some notable exceptions;
- (d) extra-EU mobility: non-European migrants are a growing factor in the mobility of intra-European manpower (Eurostat, 2006a). This implies that an aspect of the need for recognition relates to people educated and trained outside the EU;
- (e) global or 'glocal': it remains an open question as to the level at which is desirable to define mechanisms for competences recognition. In a global economy many of the drivers exist at global level. Yet, competences are acquired, developed and used within local codes. 'Zones of mutual trust' have recognised this, the 'glocal' factor. The

consequences – both intended and unintended – of a European articulation have yet to be proved.

The questions above relate to the cornerstones rather than to the detail of the current approach to EQF. It seems to us that a holistic research approach to the feasibility, implementation and effects of EQF is called for. Some commentators, including Young (2005), conclude that current evidence suggests the outcomes of NQFs have been disappointing and, if this is the case, searching research questions remain to be asked of the EQF.

6. The attractiveness of VET supply

As indicated earlier, the Lisbon goals reflect – and more generally globalisation has contributed to – changes in the labour market and the work organisation. These changes have created a stronger demand for higher and much broader levels of competences across a wide spectrum of Europe’s populations. The Lisbon process translated these demands into agreed objectives and targets for raising the education in Europe to meet the needs of a knowledge economy. Until now VET reforms have certainly had an impact on Europe’s younger generations. Yet, as we show previously, policies for neither the younger nor older generations across the EU are meeting the Lisbon targets. In this section we explore why this is the case.

The issues pertinent to this question are multifaceted. For instance, we can observe changes in the model of competence production caused by changes in labour-market needs, in VET supply, in the demographic profile and in people’s behaviours. It is important to determine which place VET provision will have in the future, and what will it look like?

Finally, we must also explore VET supply in relation to wider concepts of equal opportunity and social cohesion.

6.1. Changes in the model of competences production: the place of VET and their modalities

The expansion of VET provision has shaped a model of competence production, replacing the previous model which focused heavily on the acquisition of job-related skills. This expansion gives a central place to the formal VET course as a means for producing competent individuals.

New and more complex pathways of skills acquisition are shaping a new model of competence production based on a cooperative relationship between the range of learning sites available, and more flexible approach to the work/learning balance, for example part-time, distance, online training courses. This new model is based on a set of training opportunities designed to engage learners using initial VET courses, continuous VET courses, work-based learning and wider social experiences, etc., who’s boundaries are becoming more blurred. The ability to exploit and manage these opportunities is one of the most crucial skills people need.

The idea of a lifelong learning strategy based upon free market choices connects the lifelong learning agenda with the concept of capabilities. Young people’s patterns of individual choices are changing. This is connected with the idea that their behaviour is directly related to the management of uncertainty and to the goals they set themselves. It is important that these goals do not conflict with institutional or policy goals.

To connect learner choice with learner capability, there should be sufficient flexibility on the side of VET supply. The supply side should become more attractive in relation to the characteristics and circumstances of the learner, while remaining consistent with individual learner objectives. Attractiveness of VET provision can be affected by learners' previous experience, learner motivation, feasibility, uncertainty, opportunity and the associated option costs.

We can identify two research fields requiring further exploration to meet future VET demand and supply; the evolution of VET courses in producing competent individuals for economic and labour-market needs (see also Section 6) and the conditions needed to make VET attractive for different types of learners.

6.2. Conditions needed to make VET attractive for young people

An important dimension for European education policy is the promotion of post-compulsory education, for instance persuading young people to remain within education after the compulsory phase. Increasing the attractiveness of initial VET supply should, therefore, be a central tenet for European education policy (Leney et al., 2004).

Recently, the attractiveness of post-compulsory education to young people and their families has formed the basis of the expansion of post-compulsory education. Lately however, the attitude of young people towards post-compulsory study in several European countries has been less favourable (Béduwé and Planas, 2003; Béduwé and Germe, 2004). To reverse this trend it is important to further investigate this phenomenon.

The EDEX study (Béduwé and Planas, 2003) showed that after earlier expansion, a stabilisation in training and participation has occurred in several countries, particularly in France, where altered behaviour of the younger generations has been observed because learners now pay more attention to the outcomes of various study programmes. There is greater attention paid towards broader and shorter duration courses. This behaviour is usually explained by the prevailing labour-market conditions, with longer duration programmes becoming less popular when the economic situation is improving. However, the fact that this stabilisation has occurred during growing unemployment has led us to the hypothesis of an intergenerational training factor based on the following observation: those who previously had most increased their demand for training in the hope to find protection from rising unemployment had, nevertheless, experienced job losses during the period of recession at the beginning of the 1990s. The perceived benefit of continuing studies thus seemed less obvious. The adaptation of the individuals' VET programmes to labour-market conditions, rather than the duration or intensity of the studies, seemed a better protection against unemployment.

These observations suggest several prospective hypotheses to explain the persistence, even the acceleration of these new behaviours, which are closely linked to socioeconomic

developments. This could lead to an increased variety of education demand, with young people in a position to choose ‘at any time’ certain types of training, the prolongation of studies, identifying areas of the labour market with shortages of specialists or sectors experiencing high unemployment. We could also observe a growth of alternating cycles of employment and training, the valorisation of professional experience linked to the greater returns offered by training. Finally, we might be witnessing a rebalancing between initial and continuous vocational training within the general lifelong learning framework, encouraged, in some countries, by extended opportunities of recognition of informal and non-formal learning (Coles and Werquin, 2004). This is also linked to the extension of social security payments and to pressures to remain in work longer in order to mitigate the demographic shift. The traditional model of full-time students devoting all their time to studies, as long as possible and without being economically active, loses then its relevance. The relationship between duration of the studies, and the long-term social and labour-market outcome are weakening.

If we are now witnessing a slow-down in individuals’ demand for initial training, this will have a considerable impact on both IVET and the access to higher education. If this becomes a marked trend, the impact will be felt on achieving the Lisbon objectives for education and training, especially if this is a long-term trend. Beyond 2010, the demand for vocational training on the part of young people and their families, will remain an important subject for further study.

Factors requiring more research include:

- (a) the social and economic returns offered as compared to expectation;
- (b) the social inequalities between diverse groups of young people across Europe, related to opportunity costs of education and to the economic capacity needed to support a period of economic inactivity during full-time education (Masjuan, 2005).

6.3. Older workers and migrant workers – new VET clients groups

The current European demographic trends (Eurostat, 2004) show that:

- (a) after 2010 only migratory flows will contribute to the increase of the EU-25 overall population;
- (b) even if the general population increases, after 2010 the size of the working population will continue to decrease;
- (c) the EU-25 population will be ageing.

These demographics trends will create two distinct VET client populations in Europe: the older generation and first, second and third generation of migrants.

The detailed analysis of VET attractiveness factors continues to be essential research topics for future discourse and policy-making if VET is to reach these groups effectively.

6.4. Lifelong learning: from concept to reality

The unpredictable nature of long-term labour market skills needs for a knowledge economy, and a diachronic evolution between the supply and demand, makes it increasingly clear that we need to consider lifelong learning as an appropriate model for skill production. Lifelong learning suggests that people have the ability to learn anything at any moment of their life, and that similar education can be obtained through pathways based either on initial or on continuous education and training. This is the approach taken by Blaug and Mace (1977), who outline a 'new Jerusalem'. This approach also includes the compensatory role of the continuous training, giving less well-educated individuals a further opportunity to recover their educational deficit.

The evidence gathered during the last decades indicates that there is a relationship between the initial education level and the capacity and the likelihood to access continuous training (Eurostat data sheet 22.6.2004 referred in Leney et al., 2004, p. 67). We have verified that the relationship between initial VET and lifelong learning experiences is more complementary than compensatory, for instance IVET plays a crucial role as a precondition for successful lifelong learning.

In consequence, a central problem facing Member States is the persistence of significant youth populations without basic (compulsory) education, or low educational achievement. As indicated earlier, a central research question is, therefore, how do we improve the education of young people with no basic skills, needed to thrive in a knowledge society. For adults, the access to CVET pathways depend on the development of appropriate pedagogic, funding and physical aspects of supply in order to overcome barriers. These diverse populations have different needs that can be met in various ways, and much work needs to be done on research and development.

Therefore, we are likely to have, in the future, an increasing problem of attractiveness of VET supply, caused by a mismatch between the supply of training and the life situations, goals, and education and training strategies of the potential users. Increasing the effectiveness of VET supply will call for more research on life situations, goals, interests and education and training strategies of potential users groups.

7. Innovation in VET teaching and learning

7.1. Introduction

So far, we have anticipated and analysed emerging research issues that cluster around questions on future approaches to VET governance in Europe, and to changes in approaches to labour-market demand and supply. Not least these arrive as a consequence of new pressures players will face in an environment that has uncertainty as a continuing feature. Clearly, these factors will have an impact on learning and training supply.

Here we examine the implications for learners, teaching and training. We propose the importance of a strong research emphasis on empowering learners (expert learner) and a renewed focus on scholarship of teaching and learning.

7.2. The impact of technological innovation on European VET research and development

In the education and training sector, we observed a series of technological innovations. Many of these projects remain at a pilot stage, although some have the potential to emerge as significant full-scale developments in the near future, to the benefit of all learners. At institutional level, we might see the emergence of new observatories, the merging of global databases or the development of new accreditation agencies. These are certainly interesting developments, but in this paper we will focus more on innovation at individual level, for instance learners and tutors. For these two groups, the next decade might bring some significant changes that recognise the crucial importance of the quality of learning and teaching in developing our knowledge society. Even though they can be considered as a further continuation of past events, the following trends have the potential of improving access to learning as well as improving learning itself:

- (a) the spread of learning platforms and distance learning initiatives,
- (b) increased practice of peer, collaborative and network learning,
- (c) the personalisation of learning according to individual needs/paths,
- (d) the award of recognised certificates for online courses ,
- (e) the wide availability of different tools favouring the validation of prior knowledge and experience, for example competence management tools or numeric portfolios,
- (f) the scholarship of teaching and learning stream, aiming at professionalising the teachers, professors, trainers and all kinds of tutors.

As key factors to tackle these issues, touching not only the training sector but also the associated economic and social aspects, we will discuss the empowerment of learners and professionalising trainers. Some questions can guide us in this process.

Box 2: Questions for research on VET teaching and learning

- (a) VET professionals: how to develop and optimise initial and continuing training – linking VET teaching expertise to professional/technical expertise?
- (b) expert learners: how can training and work organisations make learning optimal? How to avoid deficit and unequal access?
- (c) certification and legitimisation of qualifications: what are the various relations and combinations that exist? What novel mechanisms recognise competence and confer legitimacy?
- (d) new technologies: how to harness IT to develop pedagogies, learning and accreditation?

7.3. How to develop and optimise initial and continuing training – linking VET teaching expertise to professional/technical expertise?

Optimising VET needs improved learning and better synergy between teaching and practice, notably to maintain the motivation of learners. Optimisation also asks for a better valorisation of both VET trainers and learners.

VET is today facing similar challenges to higher education. Surry and Robinson (2001, p. 231) underline and motivate the need for change in higher education: ‘critics claim that higher education is not meeting the needs of a diverse student population, not keeping up with growing student demand, has become too costly and is not responsive to the changing skills demanded by employers (Daniel, 1996). [...] a number of converging technologies such as high-speed networks, multimedia and innovative instructional techniques are beginning to change the way that colleges and universities operate (Katz, 1999). [...] higher education is entering a period of relatively rapid change.’

As one of the answers, Knapper (2003) notices a need for teachers professional training and an increasing awareness for that need: ‘it is now about 30 years since academics began to recognise that their work, especially their role as teachers, might benefit from some formal orientation, preparation, and continuing professional education. [...] educational development, though still a somewhat marginal activity in many institutions, has now gained a grudging acceptance from academic colleagues, and educational development centres exist in universities across the world.’

A clear link should be made between quality of learning, quality of teaching and teachers' professional development. This is by no means typical and restricted to higher education but widely relevant to vocational fields where learning is involved. Gosling (2001), describing the situation in the UK where the number of support centres for professional developments of teachers has dramatically increased in the universities, applauds the changes noticed in the last 10 years: 'there is national recognition for learning and teaching as a policy issue with allocated funding at institutional, subject and individual levels. There is a growing critical literature about learning and teaching in higher education. Educational development is recognised as having a significant impact in achieving organizational change to meet the challenges of a rapidly changing higher education environment, especially in evaluating and developing the use of IT in learning and teaching. [...] all of this amounts to a substantial set of achievements in such a short space of time.' This is promising for the future, but much is still to be done in terms of measuring the outcomes of those investments and valorising the teachers who invest time and energy into their teaching and its improvements, whatever level they teach.

7.4. A scholarship of teaching and learning

Trigwell and Shale (2004) introduce the work of Ernest Boyer and the notion of scholarship of teaching and learning, better known as SoTL: 'the idea of scholarship of teaching has both descriptive and purposive aspects. In its descriptive aspect, the notion of scholarship of teaching is related to the substantial and continuing project of understanding, categorising, defining and describing what it is that teachers and teaching are. [...] a good conception of scholarship of teaching should, therefore, carry at his heart an appropriate and empowering description of teaching. In its purposive aspect the notion of scholarship of teaching has been identified as a means of serving various ends [...] it should be a means through which the status of teaching may be raised; [...] it should also be a means through which teachers may come to teach more knowledgeably; and [...] it should provide a means through which the quality of teaching may be assessed.'

Kreber (2002) defines different levels of expertise in teaching: 'scholars of teaching are excellent teachers, but they differ from both excellent and expert teachers in that they share their knowledge and advance the knowledge of teaching and learning in the discipline in a way that can be peer-reviewed. They differ from excellent teachers in the nature and sources of their knowledge construction, with personal teaching experience being only one of various valid sources. Scholars of teaching are also expert teachers in that they engage in focused reflection or self-regulated learning, relying and building upon their declarative knowledge, procedural knowledge, and implicit knowledge of teaching and learning and the discipline. However, they go further so as to make their knowledge public'.

Approaches to teaching scholarship now share the general aim of improving the quality of student learning. As stated by Trigwell et al. (2000), 'we see the scholarship of teaching as about making transparent, for public scrutiny, how learning has been made possible'. This

new care for the quality of learning and the way to foster it through teachers' professional development allows us to be confident in the improvement of learning itself, but also of knowledge about learning. The SoTL movement, which is rapidly gaining acceptance in the US, will certainly contribute greatly to future improvement in standards of learning. It gathers huge research funding, organises conferences, publishes scientific journals and develops specific training for teaching/training/tutoring professionals.

The bases for the SoTL movement is simple; improving quality in teaching, in order to improve learning (to produce better professionals) and recognise teaching experience (valorisation). It is a 'win-win' process, where both learners and trainers find advantages. Its principles, inspired by Schön (1983), are also simple; training will improve if trainers better understand what they do and why they do it, and if they question themselves on how to improve it. Reading about teaching will help improve; publishing the answers to the local trials of each trainer in his/her groups will contribute to a shared understanding of learning and best practice.

7.5. Is training optional or required for teachers?

The SoTL movement already has antennae in Europe. The UK is organising focused conferences. SoTL is used by the Nordic countries and Belgium for building teachers curricula and credits are given to those professionals who involve in their own continuing training as teachers.

Even in higher education, which is the least advanced educational sector for the organisation of teacher training for its own teachers, the tendency is now to propose optional courses to teachers. In a minority of countries, those courses are mandatory. For example, in Sri Lanka (Knapper, 2003), 'new academics are now required to take a year-long SEDA-accredited course on teaching and learning in higher education before they can gain a permanent appointment.' Less demanding but already a big change, Cambridge University in the UK now has a promotion route based on excellence in teaching. Those signs are predictors of a real change in higher education: it is more and more considered as normal not only to teach, but to teach in order to allow the students to learn.

Lessard (2002) explains that, in the US, the Holmes Group recommends a performance related system in which the teachers' work, responsibilities and salary is differentiated according to his/her excellence in teaching. Several categories of teachers would be integrated in a formal career structure, ranging from instructors to professional teachers and then to career professional teachers, this latter category representing some 20% of the schools professionals. For several reasons, this proposal has not been well received by the American teachers. Nevertheless, the concept of recognising teachers' performance is an increasing trend worldwide, and promises to be an important issue in the future. There is an increasing positive perception of this work by the national board for professional teaching standards, which is working towards promoting excellence in teaching.

7.6. A likely scenario

In continuing education and VET, a likely scenario is that trainers will have to prove the quality of their teaching more frequently. The teaching portfolio will certainly be one of the tools the employers will use to select their trainers, especially if there is, in the future, an agreement on standards to be used to document teaching and learning. With its literature defining excellence in teaching and professionalising teaching and learning, SoTL could influence those standards. A wider offer of teacher trainings will emerge, allowing teachers and trainers to make a choice between several pathways, partly at a distance, to acquire new qualifications. With continued globalisation of services, training centres will also be judged through the quality of continuing training they provide to their employees across the world.

International evaluation bodies like accreditation agencies will set standards, among which criteria will stand the training level of the trainers. That level will be attested by both initial and continuing training, and by validation of professional experience. Other scenarios may emerge, giving less room to professionalisation of trainers, but it seems plausible that in the long term VET follows this general educational trend.

Having trainers studying the art of learning, conducting small scale research in their own groups of learners and communicating about their reflections and actions (SoTL) has good chances to improve learning, increase the motivation of trainers and learners and lead to valorisation of those two types of actors. The causal links between those influences are not proven by consistent large-scale studies in varied settings but many local initiatives identify the conditions in which those links are reliable.

This scenario has several implications for the future. Among them, the need for:

- (a) an increase in teacher training capacity, both face-to-face and online;
- (b) an accreditation of those programmes (a particular attention should be placed on the practice-what-we-preach method, which in this context should be mandatory to ease transfer);
- (c) research on the consequence of those programmes on the quality of vocational learning, with a transfer on field;
- (d) resources in order to have vocational training benefit from the technological advance trainers will met during their own training.

7.7. Expert learners: how can training and work organisation make learning optimal? How to avoid deficit and unequal access?

Empowering learners seems to be one way to tackle the learning improvement. The main danger of this empowerment is to increase the gap between two types of learners:

- (a) experts learners, self directed and goal oriented, able to use their meta-cognitive skills to make the best decisions about their learning and maximise its effects;
- (b) novice learners with a low self-image, poor learning strategies and little meta-cognitive reflection.

7.8. What do we mean by empowering learners?

We will use meta-cognition as an example to illustrate what empowerment means and help in understanding what kind of empowerment we should be looking for.

For Phelps et al. (2004) ‘meta-cognition refers to knowledge concerning one’s own cognitive processes, and the active monitoring and consequent regulation of these processes in the pursuit of goals or objectives’ (Flavell et al., 1993; Flavell, 1976). Paris and Winograd (1990), as well as Jones and Idol (1990) discuss two dimensions of meta-cognition: self-appraisal and self-management. Self-appraisal refers to reflections about one’s knowledge state and abilities, including what you know, how you think, and when and why to apply knowledge and strategies. Cognitive self-management refers to meta-cognitions in action, or the ability of the individual to plan and implement appropriate strategies and to monitor, adjust and troubleshoot their performance.

If the benefits of meta-cognitive approaches lie in their ability to transfer responsibility for monitoring learning from teachers to learners, this benefit can also be considered as a drawback for those learners not trained in meta-cognition. The promotion of positive self perceptions, affect and motivation it can bring to learners is only true if learners realise the benefit they can take out of it and are able to take advantage of it. Promoting meta-cognition among learners, in its two components of self-appraisal and self-management, is an example of empowering the learners, shifting to them part of responsibilities considered so far as standing on teachers’ side.

7.9. Why empower learners?

‘In contexts of rapid change, expert learners’ metacognitive strategies provide distinct advantages: “when asked to deal with novel situations, the specific cognitive skills and learning strategies we have available become more critical than the limited content knowledge we may possess” (Ertmer and Newby, 1996, p. 7)’ (Phelps et al., 2004).

Expert learners know what they do or do not know, and undertake the appropriate actions to actively acquire the missing knowledge, skills and competences. When having an equal unfamiliarity with the content of the domain, they will reach a fixed goal significantly better and quicker than novices. A meta-cognitive approach to learning and the desire to empower learners to continue to support their own professional lifelong learning in any domains

beyond the period of class obligation, is a good long-term education strategy. All learners should become expert learners, empowered learners.

7.10. How can we empower learners?

How can we help actively learners to improve their self-appraisal and self-management skills? By giving them an opportunity to experience various learning situations and reflect on their own learning. VET and initial training should focus on developing this reflective capacity in learners. The effort would benefit not only learner, but employers also, as this capacity is a key factor in lifelong learning. The activities likely to develop this capacity are pre (before), per (during) and post (after) performance judgements, analysis and regulations, done by the learner themselves to better understand the learning process and the product of that learning. The trainer/tutor can participate in the reflective learning, helping to analyse and make responsive decisions from the observations.

As this kind of process is typical of an expert learner, the only way to empower all learners is to work on it at school, with each individual who needs it. Therefore, it is also necessary to work on empowerment with the trainers/tutors. Empowering activities should be included in the training of trainers curricula, using various methods and tools to ease the transfer to their own target learners.

7.11. Validating prior knowledge and experience

The trend towards valorisation is already an important issue for most European countries. Schools and other VET suppliers certify what the learner achieved, using certificates and diplomas. However, it is working life that recognises and legitimises vocational qualifications. Sections 4 and 5 showed that some of the traditional links between VET qualifications and the labour market became problematic.

One consequence is that national or regional bodies delivering diplomas are facing the challenge of accreditation or recognition of the combination of knowledge and skills that people have acquired through their working lives, without lowering the perceived value of their former diplomas. In France, as Leplâtre underlines, ‘experience has the same value as formal courses. All diplomas and certificates (there are estimated to be more than 15 000) will be included in the national listing of vocational certificates (*Répertoire national des certifications professionnelles*, RCNP). Candidates should consider their own skills and the inter-relationship between them. [...] the French secondary and higher education structures use the candidate’s application as proof of his or her skills. The Ministry of Labour prefers the use of in situ assessments, which validating agencies are able to set the relevant conditions for. For candidates, this approach generates “narcissistic restoration” i.e. it restores self-

esteem. Companies, too, are interested in this scheme, seeing it as a means of optimising their image as a “vocational qualification company” ’ (Leplâtre, 2003).

Lenoir describes the remaining issues in the French situation, although it is one of the most advanced in Europe in this field: ‘if such as change is to become reality, a number of questions must be answered. Firstly, there is the question of information for users, which impacts upon the degree to which, in a public service system, all citizens have equal access to validation. Then come the problematic questions of funding, followed by that of low capacity of VKE [validation of knowledge acquired through experience] specialists. It appears to be necessary to provide training for players in the field of VKE’ (³).

Nevertheless, the debate around valorisation and the possibilities offered to the professional and lifelong learning sectors in general will be a major subject for the next 10 years. The interest and support showed by employers will undoubtedly be a driver for the adoption of VKE schemes in European countries. We see this issue as a challenge for 2010 and beyond, recognising the value of experience in sound political decisions, considering not only isolated skills but also transversal competences and meta-cognition, which is not yet the case, in processes giving equal opportunities to candidates with a real valuable expertise.

Empowering the learners is also a key issue: meta-cognition will be one of the key competences to be acquired by candidates, in order to be aware of the experience they could get recognised, validated and accredited.

7.12. IT as a developing, useful tool: harnessing new IT to develop pedagogies; learning and accreditation

We can identify three emerging types of tools that could play an important role in helping self-appraisal and self-management skills develop in the next 10 years. Below we outline the importance of online management of competences, electronic portfolios (usually called e-portfolios) and shared online contents.

7.12.1. Online management of competences

If a teacher/tutor/trainer generates a set of competences to be mastered by a group of learners to get a specific qualification, this list can be displayed online, with a restricted access to those concerned learners, each of them progressing in the mastery of the set of competences at his/her own pace. When a learner has acquired a new competence, they can ask for its online validation by the tutor(s) responsible for this specific item. The list of items

(³) Interview conducted by Centre-inffo (<http://www.centre-inffo.fr>), the official reference for VKE in France

(competences) can link to learning activities, individual or collectives, as well as to discussion forums dedicated to clarifications or to real ‘on task’ interactions.

Those online competence management tools can be either commercial or free products, some of the latter being open source. Having them online takes advantage of distributed features, allowing for example the validation from anywhere and from several tutors instead of one single individual. Usually, to validate the mastery of a competence, a same capacity has to be proven in different contexts. This justifies the validation of each item by more than one tutor, each of them being competent in a specific domain.

The following screenshot gives an example of the information that can be displayed and read by a tutor who is partly responsible (together with 2 colleagues) for the validation of 20 competences in a group of 5 students. The screenshot shows for example that only one student (Nijole) has asked for the validation of the item (competence) #16. Each student has his/her own path, progressing at his/her own pace. When a student reaches the goal, his/her 20 competences are fully green coloured, considered as acquired in all facets by all tutors.

Figure 3: *Multitutor validation for a set of 20 competences in a group of 5 learners – screenshot of an online competence management tool*



This kind of tool empowers the learners (in this case, adults) by giving them the flexibility they need in terms of place, time, pace and method. Although it asks for good self-management skills, it is a smooth way of raising awareness and improving the learners’ self-appraisal skills. Studies are being undertaken to assess whether this kind of tool could be one of the ways to train autonomy and meta-cognition: the key questions seem to be: how can we measure autonomy through objective data? What kind of link exists between autonomy and

achievements, in an environment where the learner is supposed to ask for help and go for communication without external incentives? Does autonomy largely affect the achievements? How to progressively install autonomy? Do the tools (like competence management tools) help in this progression? In an electronic environment asking for autonomy and meta-cognition, does the information on his/her own preferences contribute to the good individual monitoring of time and achievements? At first sight, it seems that several different paths can lead to similar achievements, and that a close follow-up by a tutor is necessary to raise awareness on individual strategies and difficulties, therefore favouring both autonomy and meta-cognition. The tutor and the online tools would be of a crucial help for the learner to build his/her competence 'capital', usable in all different learning areas. Those first insights should (and will) be further explored and generate stronger findings ⁽⁴⁾.

7.12.2. Electronic portfolios (e-portfolios)

To illustrate the goal, interests and scope of a portfolio, we will choose as an example the field of education and training. We will talk about the teachers' portfolio, knowing that each profession and each learner, in school as well as professional education or professional life, could benefit from this kind of documentation of his/her practice.

We shall employ the definition of Doolittle (1994), who describes a teacher's portfolio as '[...] a collection of work produced by a teacher, which he chooses to maintain and structure to highlight his knowledge and skills in teaching'. The term *teachers' portfolio* covers the collection of a tutor's or a trainer's work as well as the one of a teacher.

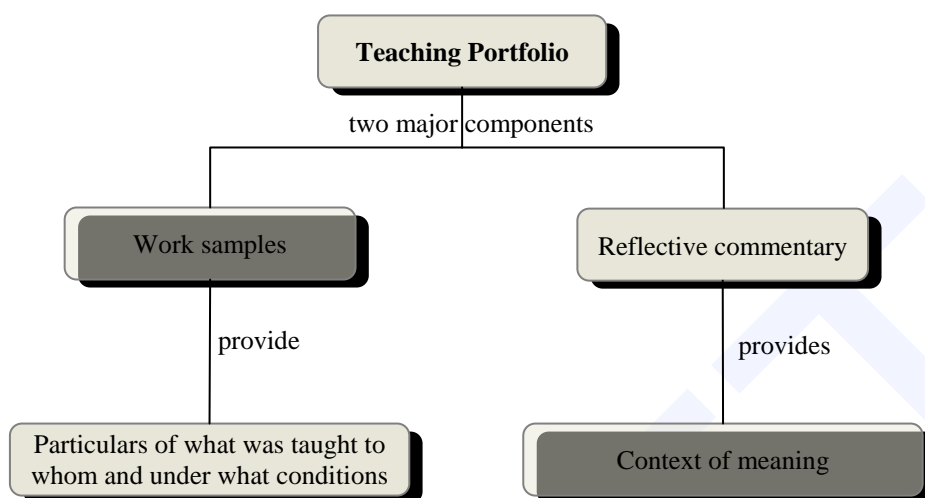
Such a collection may be electronic or non-electronic, and may have various objectives, which will determine its structure and contents. Van Tartwijk et al. (2005) offer a useful classification of e-portfolio types, which we repeat below:

- (a) assessment portfolios,
- (b) presentation portfolios,
- (c) development portfolios,
- (d) reflective practice portfolios,
- (e) combined portfolios.

At Cornell University, the *Teaching evaluation handbook* (CLT, 2007) presents the main components of a portfolio to teachers as shown in Figure 4.

⁽⁴⁾ In Liège (LabSET-ULg, Belgium), François Georges is working on such hypothesis, with a first report to be published at the end of 2006.

Figure 4:



In the work samples section, the trainer/teacher/tutor should also offer evidence of what he puts forward (cf. the classroom assessment trend) (Poumay, 2005). The teachers' portfolio involves collecting subjective and objective evidence of the impact of their reflection and action. For example, with regard to the impact of an action, teachers should not confine themselves to collecting students' views on their degree of satisfaction with changes made, but should actually measure the learning achieved by those students, and act as to improve that learning.

This type of tool is consistent with the validation of prior knowledge and experience, offering teachers the chance to insert details of previous training attended and offering credit for such past experiences, provided they are subjected to reflection and critical analysis. This also enables everyone to capitalise on the various courses, workshops and conferences they have attended internally, in their own institution, or externally, thus providing extra value for these initiatives.

E-portfolios are a significant development in Europe, partly caused by the valorisation possibilities they offer. As examples, an e-portfolio conference was held in Cambridge (Eifel, 2005), following on from two international conferences – Poitiers (2003) and La Rochelle (2004) – and national events in Australia, Canada, Ireland and the UK. Those conferences brought together experts and practitioners from all over the world to present and discuss progress in this fast-growing field. A similar conference was held in Melbourne in 2004 on *mapping the territory: who is doing what with portfolios across Australia and Asia Pacific*. Canada is also actively involved in research into e-portfolio techniques, as are most European countries. In France, a conference of this kind will be held annually. In January 2006, a cooperation agreement was signed between some actors in the e-learning field ⁽⁵⁾, allowing

⁽⁵⁾ Those two actors are EifEL (European Institute for eLearning) and HR-XML Consortium Europe, active in standardisation of pedagogical objects.

standardisation of e-portfolios around the world, in order to have common developments emerging from both educational and professional sectors eased by the use of common protocols.

E-portfolios will certainly be more commonly spread in 10 years time. Some of the consequent challenges include the protection of private data, equal access opportunities to the use of those tools and effective support services available to help anybody acquire the necessary meta-cognitive skills to be able to present him/herself in a way that promotes both employability and self-esteem.

7.12.3. Shared online tools and contents

Designed for widely informing and training, shared contents are being developed via technological tools such as the Internet.

Rossmann⁽⁶⁾, well known for his Global University project, explains his aspirations for the long term. For example, he wishes ‘that the G8 and other political leaders would establish a global network [...] devoted exclusively to education that would contain all essential programs, resources, texts, media, and so forth to meet the needs of “education for all”. In time it would become a semantic network, which among other things would cross-index everything for instant retrieval [...] and that would provide simpler explanations or multimedia illustrations for concepts that a youngster or a person with limited education would not otherwise understand’. Such a universal tool would benefit VET as well as education, but would ask for a good guidance from VET professionals if we want an all VET public to take the best advantage out of it. Rossmann also asks for a ‘bottom-up strategy’ for lifetime education for all. His vision comprises a neighbourhood-empowering school, that ‘could be the local centre for lifetime education, connected to all needed resources, and operated by a community education cooperative. [...] A global ‘cooperative’ distribution network [...] would provide second-hand learning materials free of charge once for-sale, upgraded versions had been produced.’ Here also, VET professionals would have an important role to play: as they could serve as learning brokers, as described by Ewell (2002), helping individual learners to choose their virtual groups, tools and contents, to be able to benefit from the existing resources. VET learning brokers would also work on transversal skills with their learners to allow them to benefit from the wider experience of learning. Finally, Rossmann wishes that we would ‘learn more about each learner’s talents and gifts, opportunities and needs [...]’. Future materials should be able to “study the learner” in an automated process, while the learner studies the electronic materials. [...] Technology can create a computerised profile that could be the basis for a tailored, individualised education plan that grows and changes across a lifetime. Such profiles and individualised education

⁽⁶⁾ Parker Rossmann was interviewed by James Morisson. Note that on his website (<http://ecolecon.missouri.edu/globalresearch/index.html>), Parker Rossmann proposes three book-length volumes concerning the future of higher education.

could be the real revolution in future education.’ If the process is flexible and is decided upon by the learners themselves, personalisation can be of great help for progressing through learning paths and optimising learning.

Nevertheless, it also again asks for abilities in self-monitoring, which has to be learned as any other competence. Again, empowering learners and training trainers makes sense if we want VET to take the best advantage from the future tools and content available.

For Everhart ⁽⁷⁾, the future of learning will be more ‘connected’, in the sense of using electronic media, caused by the number of future learners: ‘considerable evidence indicates that the growing number of adult learners will double the number of learning hours needed by the total learning population. [...] if this is true (and I believe that it is) that ours is becoming a knowledge-worker economy, [where] approximately half of all instruction just has to be delivered as virtual, or ‘connected’, learning [...]’.

Virtual delivery is a great way to achieve that leverage. It hardly seems necessary to add that what is true for initial education is also true and even more so for IVET and CVT.

7.13. Conclusion

This section has concentrated mainly on micro level teaching and learning, complementing the meso and macro levels the earlier sections have concentrated on. In the light of this analysis of the need for new paradigms and future research in teaching and learning for VET, we have highlighted two key issues: professionalising VET teachers and trainers; and developing expert learners. A third issue is the extent to which new technologies can be harnessed to ease and support these developments.

⁽⁷⁾ Source available from Internet: http://technologysource.org/article/higher_education_in_2010/ [cited 10.5.2007].

8. Emerging issues in VET research – conclusion

This report has concentrated on several particular themes across the field of VET, with the purpose of identifying some of the new and emerging key points for European VET research post-2010. The time frame we have held in mind is the Lisbon decade once it has reached its conclusion. The report intends to stimulate debate about the emerging issues, to help with the planning for future European VET research priorities.

We have covered three substantive areas. First, we move the focus from 2000-10 to 2010-20 and beyond and suggest that questions of European governance should be high on the VET and lifelong learning research agenda. The scenarios we developed can help to indicate possible political directions post 2010, opening up questions on how Member States will cooperate in the future and whether the OMC may be modified. Second, we identify some uncertainties about trends in skills supply and demand, not least the ways in which individual choices concerning training and careers may alter in an uncertain labour market. Third, we explore the role of innovation in VET teaching and learning, with particular regard to the concept of the expert learner, a professional scholarship of teaching and learning, and the optimal use of information technology.

Importantly for VET research, the underlying motif of this paper is how to address uncertainty and change in the globalised economy as we move towards a knowledge-based society. It remains the case that labour costs in emerging economies are far lower than in European countries, particularly some of Europe's advanced economies. The average hourly labour costs in Germany and Denmark are, for example, 25 times higher than India's. Yet India is developing its scientific and technological capacity at a rapid rate. The economic growth of countries such as China and India create new opportunities in the global economy, but this also brings about new risks and challenges for European countries. If the argument holds that uncertainty will outweigh certainty in many respects for planning and institution building at European and national levels and for individuals in the choices they make, this will mark a significant shift of emphasis and paradigm for European VET research. Fundamentally, this is in itself the emerging challenge for future VET research.

Several priorities are most likely to remain high on the research and policy agendas post 2010 and the strongest evidence suggests European ambitions in their respect are important for Europe's economic, social and environmental future. This is because many of the key objectives remain unfulfilled at European and national levels. Thus, achieving the priority indicators for lifelong learning as well as several of the activities organised around the Education and Training 2010 programme and the Copenhagen/Maastricht agenda for VET will call for continuing research and policy attention. It is important that any analysis uncovering new needs places due emphasis on this continuing aspect. In the future global environment, as we described it, these currently unfulfilled priorities will remain important, and there is a strong case to give them continuing priority. Future objectives should be built on the success of current objectives, which should not be diluted, even though they are

unlikely to be achieved by 2010. Enlargement involving Romania and Bulgaria in the short term, and possibly Turkey and other countries in the longer term, will stress the need to follow through on existing programmes. An expanded Europe will create strong challenges for VET policy and development, and future strategic objectives must reflect these.

Achieving high levels of adult participation in learning in the workplace remains an elusive goal. VET research should have a key role in identifying how to engage adults in the workforce in training, and also engaging those seeking to enter or re-enter employment. In particular, we conclude that over the next decade, new VET research will be needed to:

- (a) ask seriously what skills older people will need to develop and how work organisation can accommodate their needs;
- (b) identify how to meet the changing needs of migrants – not least distinguishing between first, second and third generation migrants and between different ethnic/social groups. Factors such as age, gender and nationality need far greater attention;
- (c) analyse social inequalities between diverse groups of young people across Europe, which are related to opportunity costs of education and to the economic capacity needed to support changes in economic activity during full time education;
- (d) find ways to promote education and training for women entering and re-entering the labour market, and establishing gender equality.

In conclusion, we identify five emerging issues for further consideration.

First, a key new challenge for research arises from what we now know with ever-greater certainty about global environmental trends. This is to analyse the role of VET in achieving the key European goals of environmental sustainability. Research is also needed into skills needed to develop and exploit new sources of energy for Europe.

Second, VET governance at European level should now be an important area for future VET research. Joined-up policy at European level is key to successful innovation, but the field remains under-researched and developments in VET should be better linked with European innovation strategies. Further, as projects such as EQF proceed towards implementation at EU level, they will need robust impact evaluation.

Third, much of the future for labour markets, firms and individuals – and, therefore, for VET providers – is characterised by uncertainty. A key task for future VET research is to develop an understanding of new relationships between VET and employment that are emerging, how individuals may make choices about their careers and labour-market positions, and the new forms of collective activity that may emerge. Individuals are developing new strategies of adaptation to uncertainty, which are not always easy to understand. The following are among the research questions that arise:

- (a) work organisation: what will be the impact of changing patterns of individual choice on patterns of learning and working, and combining both? What strategies will actors

develop to control new labour-market situations? How will work organisation adapt to meet these changes?

- (b) career trajectories: how will individuals make choices during their learning careers and throughout professional life? What resources help individuals to manage their career trajectory, and under which conditions?
- (c) social organisation and individual choices: how can individuals be supported in making career choices and informed decisions and in their working activity? Which public and collective resources, including modes of VET provision, can work best under these conditions?

Fourth, we introduce a strong concept that empowerment will become the effective way to tackle the need to improve the capabilities of and pathways open to learners. Expert learners are self-directed and goal-oriented, and are able to use their skills to make the best decisions about their learning. A concomitant risk is a divide between expert and novice learners, the latter having low self-image, poor learning strategies and little reflective ability. Thus, for research and development issues into innovative aspects of VET teaching and learning, we highlight three issues:

- (a) research into a scholarship of teaching and learning, to contribute to the professionalisation of VET teachers and trainers;
- (b) research into empowering VET learners, developing 'expert learners' and mitigating the divide between expert and novice learners;
- (c) harnessing new technologies to VET teaching and learning.

Finally, the conceptualisation of competences certainly calls for further investigation on the part of VET research. It is a concept that should not be taken for granted or assumed to be unproblematic. A key question is whether it is possible to use a single, holistic and homogeneous methodology to recognise all kinds of competences.

Our conclusions are drawn from the analysis contained in the report. These are the headlines, intended to stimulate debate on issues of European significance, and of particular national interest. The sections of the report contain more contextualised proposals.

List of abbreviations

OMC	Open method of coordination
GDP	Gross domestic product
EQF	European qualifications framework
ECVET	European credit for vocational education and training
IVET	Initial vocational education and training
CVT	Continuing vocational training
NQF	National qualifications framework
SoTL	Scholarship of teaching and learning
VKE	Validation of knowledge acquired through experience
SoTL	Scholarship of teaching and learning

Bibliography

Auer, P.; Cazes, S. (eds) *Employment stability in an age of flexibility: evidence from industrialised countries*. Geneva: ILO, 2002.

Béduwé, C.; Germe, J-F. Raising the levels of education in France: from growth to stabilisation. *European Journal of Education*, 2004, Vol. 39, No 1, p. 119-132.

Béduwé, C.; Planas, J. *Educational expansion and labour market: a comparative study of five European countries : France, Germany, Italy, Spain and the United Kingdom – with special reference to the United States*. Luxembourg: EUR-OP, 2003 (Cedefop Reference series, 39).

Béduwé, C. et al. *Spécialité de formation, spécialité d'emploi et performance d'insertion*. Presented at the XII Journées d'étude sur les données longitudinales organised by LIRHE, CEREQ and LASMAS in Toulouse, 26 and 27 May 2005.

Bjørnåvold, J. Identification, assessment and recognition of non-formal learning: European tendencies. In: Fries Guggenheim, É. (ed.) *Agora V: Identification, evaluation and recognition of non-formal learning: Thessaloniki, 15-16 March 1999*. Luxembourg: EUR-OP, 2002, pp. 9-32 (Cedefop, Panorama series, 45).

Blaug, M.; Mace, J. Recurrent education: the new Jerusalem. *Higher Education*, 1977, Vol. 6, No 3, pp. 277-299.

Bouder, A. et al. Readability of qualifications: a question as old as Europe? In: Descy, P.; Tessaring, M. (eds) *Modernising vocational education and training. Fourth report on vocational training research in Europe: background report, Volume 3*. Luxembourg: EUR-OP, 2008 (Cedefop reference series).

Bruyère, M.; Lemistre, P. Trouver un emploi en rapport avec sa spécialité de formation: une situation rentable? In: Giret, J-F. et al. (eds) *Des formations pour quels emplois*. Paris: La Découverte, 2005.

Bureau, M.; Marchal, E. *Au risque de l'évaluation: salariés et candidats à l'emploi soumis aux aléas du jugement*. Villeneuve d'Ascq: Presses Universitaires du Septentrion, 2005.

Castells, M. *The information age: economy, society and culture*. Oxford: Blackwell, 2000.

Colardyn, D.; Bjørnåvold, J. *The learning continuity: European inventory on validating non-formal and informal learning*. Luxembourg: EUR-OP, 2005 (Cedefop Panorama series, 117).

Coles, M. Evaluating the impact of reforms of vocational education and training: examples of practice. In: Descy, P.; Tessaring, M (eds) *Evaluation of systems and programmes: third report on vocational training research in Europe: background report*. Luxembourg: EUR-OP, 2004, pp. 9-51 (Cedefop Reference series, 57).

Coles, M.; Werquin, P. *The role of national qualifications systems in promoting lifelong learning*. Prepared for the conference on Construction of the European qualifications organised by HCEEE and BETA Céreq in Strasbourg, 30 September and 1 October 2004. Paris: OECD, 2004.

CLT – Center for Learning and Teaching. Chapter II: the teaching portfolio: a model for documenting teaching and its improvement. In: CLT. *Cornell University teaching evaluation handbook. Third edition*. New York: Cornell University, 1997. Available from Internet: <http://www.clt.cornell.edu/resources/teh/ch2.html> [cited 2.4.2007].

Dale, R. *The construction of an European education space and education policy*. Paper presented to European Social Fund exploratory workshop on globalisation, educational restructuring and social cohesion in Europe, held in Barcelona, 3 and 5 October 2002.

Dale, R. Forms of governance, governmentality and the EU's open method of coordination. In: Larner, W.; Walter, W. (eds) *Global governmentality: governing international spaces*. London: Routledge, 2004, pp. 174-194.

Dale, R. The potentialities of 'la mesure en education': the European Union's open method of coordination and the construction of a European education space. In: Vinokur, A. *Pouvoirs et mesure en éducation*. Bondy: ARES IRD, 2005 pp. 49-65 (Cahiers de la recherche sur l'éducation et les savoirs, hors-serie 1).

Daniel, J. *Mega-universities and mega-knowledge*. London: Kogan Page, 1996.

CERC – Conseil emploi revenus cohésion sociale. *La sécurité de l'emploi face au défi des transformations économiques*. Paris: CERC, 2005 (Rapport du CERC, No 5).

De Mooij, R.; Tang, P. *Four futures of Europe*. The Hague: Centraal Planbureau, 2003.

Descy, P.; Tessaring, M. *Training in Europe: second report on vocational training research in Europe: background report* (three volumes). Luxembourg: EUR-OP, 2001 (Cedefop Reference series).

Doolittle, P. Teacher portfolio assessment. *Practical Assessment, Research and Evaluation*, 1994 Vol. 4, No 1. Available from Internet: <http://ericae.net/pare/77%7Egetvn.html> [cited 2.4.2007].

EIU – Economist Intelligence Unit. *Twenty questions on the future of Europe: the EU after Non and Nee*. London: EIU, 2005.

Ertmer, P.A.; Newby, T.J. The expert learner: strategic, self-regulated and reflective. *Instructional Science*, 1996, Vol. 24, No 1, pp. 1-24.

EC – European Commission. *Declaration of the European Ministers of vocational education and training, and the European Commission convened in Copenhagen on 29 and 30*

November 2002, on enhanced European cooperation in vocational education and training. Brussels: European Commission, 2002a. Available from Internet: http://ec.europa.eu/education/copenhagen/copenhagen_declaration_en.pdf [cited 17.4.2007].

EC – European Commission. *Communication from the Commission to the spring European Council in Barcelona: the Lisbon strategy – making change happen*. Luxembourg: EUR-OP, 2002b (COM(2002)14 final). Available from Internet: http://eur-lex.europa.eu/LexUriServ/site/en/com/2002/com2002_0014en01.pdf [cited 18.4.2007].

EC – European Commission. *Commission staff working paper in support of the report from the Commission to the spring European Council in Barcelona {COM(2002)14 final}: the Lisbon strategy – making change happen*. Brussels: European Commission, 2002c (SEC(2002)29/2). Available from Internet: http://ec.europa.eu/growthandjobs/pdf/29_en.pdf [cited 12.4.2007].

EC – European Commission. *Maastricht Communiqué on the future priorities of enhanced European cooperation in vocational education and training: review of the Copenhagen declaration of 30 November 2002*. Brussels: European Commission, 2004a. Available from Internet: http://ec.europa.eu/education/news/ip/docs/maastricht_com_en.pdf [cited 17.4.2007].

EC – European Commission. *Report from the Commission to the Spring European Council: Delivering Lisbon reforms for the enlarged Union*. Luxembourg: EUR-OP, 2004b (COM(2004)29 final/2). Available from Internet: http://ec.europa.eu/growthandjobs/pdf/COM2004_029_en.pdf [cited 2.4.2007].

EC – European Commission. *Communication from the Commission to the Council on European policies concerning youth: addressing the concerns of young people in Europe: implementing the European Youth pact and promoting active citizenship*. Communication from Mr. Figel in association with Mr. Špidla. Luxembourg: EUR-OP, 2005a (COM(2005)206 final). Available from Internet: http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005_0206en01.pdf [cited 2.4.2007].

EC – European Commission. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: European values in a globalised world: contribution of the Commission to the October meeting of Heads of State and Government*. Luxembourg: EUR-OP, 2005b (COM(2005)525 final/2). Available from Internet: http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005_0525en01.pdf [cited 2.4.2007].

EC – European Commission. *Communication from the Commission to the Council and the European Parliament: priority actions for responding to the challenges of migration: first follow up to Hampton Court*. Luxembourg: EUR-OP, 2005c (COM(2005)621 final). Available from Internet: http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005_0621en01.pdf [cited 2.4.2007].

EC – European Commission. *Growth and jobs: a new start for the Lisbon strategy. working together for Europe's future, a new start for the Lisbon strategy. Communication from the Commission to the Spring European Council: working together for growth and jobs: a new start for the Lisbon strategy.* Luxembourg: EUR-OP, 2006a. Available from Internet: http://ec.europa.eu/growthandjobs/pdf/comm_spring_en.pdf [cited 30.3.2007].

EC – European Commission. *Time to move up a gear: the new partnership for growth and jobs. Communication from the Commission to the spring European council 2006:* Luxembourg: EUR-OP, 2006b. Available from Internet: http://ec.europa.eu/growthandjobs/pdf/illustrated-version_en.pdf [cited 12.4.2007].

EC – European Commission. *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions: report on the functioning of the transitional arrangements set out in the 2003 Accession Treaty (period 1 May 2004-30 April 2006).* Luxembourg: EUR-OP, 2006c (COM(2006)0048 final). Available from Internet: http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0048en01.pdf [cited 30.3.2007].

Council of the EU. Modernising education and training, a vital contribution to prosperity and social cohesion in Europe. 2006 Joint Interim Report of the Council and the Commission on progress under the 'education and training 2010' work programme. *Official Journal of the European Union*, 2006, C79, pp. 01-18. Available from Internet: http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/c_079/c_07920060401en00010019.pdf [cited 12.4.2007].

EESC – European Economic and Social Committee. *Towards a more dynamic approach to implementing the Lisbon Strategy.* Luxembourg: EUR-OP, 2004. Available from Internet: <http://www.eesc.europa.eu/documents/publications/pdf/booklets/EESC-2004-001-EN.pdf> [cited 12.4.2007].

Eifel. *ePortfolio 2005: transforming individual and organisational learning.* The third international ePortfolio Conference held in Cambridge on 26-28 October 2005. Conference papers. Champlost: Eifel, 2005. Available from Internet: <http://www.eifel.org/publications/eportfolio/proceedings/ep2005> [cited 10.5.2007].

Eurostat. *Acquisition of citizenship.* Luxembourg: EUR-OP, 2004, (Statistics in Focus, No 03 – Population and social conditions, theme 3). Available from Internet: http://epp.eurostat.cec.eu.int/cache/ITY_OFFPUB/KS-NK-04-003/EN/KS-NK-04-003-EN.PDF [cited 13.4.2007].

Eurostat. *Communiqué de presse.* 8 April 2005.

Eurostat. *Non-national populations in the EU Member States.* Luxembourg: EUR-OP, 2006a (Statistics in Focus, No 8 – Population and social conditions). Available from Internet:

http://epp.eurostat.cec.eu.int/cache/ITY_OFFPUB/KS-NK-06-008/EN/KS-NK-06-008-EN.PDF [cited 13.4.2007].

Eurostat. *First demographic estimates for 2005*. Luxembourg: EUR-OP, 2006b (Statistics in Focus, No 01 – Population and social conditions). Available from Internet: http://epp.eurostat.cec.eu.int/cache/ITY_OFFPUB/KS-NK-06-001/EN/KS-NK-06-001-EN.PDF [cited 13.4.2007].

Eurostat. *Long-term population projections at national level*. Luxembourg: EUR-OP, 2006c (Statistics in focus, No 03 – Population and social conditions). Available from Internet: http://epp.eurostat.cec.eu.int/cache/ITY_OFFPUB/KS-NK-06-003/EN/KS-NK-06-003-EN.PDF [cited 13.4.2007].

Ewell, P.T. *Three dialectics in higher education's future*. Seattle, WA: Antioch University, 2002 (Project on the future of higher education working papers, No 2).

Falzon, P. *Ergonomie*. Paris: PUF – Presses Universitaires de France, 2004.

Flavell, J. et al. *Cognitive development* (third edition). Englewood Cliffs, NJ: Prentice-Hall, 1993..

Flavell, J.H. Metacognitive aspects of problem solving. In: Resnick, L.B. (ed.) *The nature of intelligence*. Hillsdale, NJ: Lawrence Erlbaum, 1976, pp. 231-235.

Fries Guggenheim, É. (ed.) *Agora V: Identification, evaluation and recognition of non-formal learning: Thessaloniki, 15-16 March 1999*. Luxembourg: EUR-OP, 2002 (Cedefop Panorama series, 45).

Gauron, A. *La formation professionnelle tout au long de la vie*. Paris: CAE – Conseil d'analyse économique, 2000 (Rapport du CAE, No 22).

Georgopoulos, T. *La Méthode ouverte de coordination européenne: en attendant Godot?* Montreal: Institute d'Études Européennes, 2005 (Note de recherche, 01/05).

Germe, J.F. Vocational guidance, training and employment: training for a specific occupation or to adapt to market changes? *European Journal Vocational Training*, 2002/II, No 26, pp. 20-64. Available from Internet: http://www.trainingvillage.gr/etv/Upload/Information_resources/Bookshop/303/26_en_germe.pdf [cited 13.4.2007].

Germe, J.F. et al. *Les mobilités professionnelles: de l'instabilité dans l'emploi à la gestion des trajectoires*. Rapport de l'atelier 'mobilités professionnelles'. Commissariat général du plan. Paris: La Documentation française, 2003 (Qualifications et Perspectives). Available from Internet: <http://lesrapports.ladocumentationfrancaise.fr/BRP/034000060/0000.pdf> [cited 13.4.2007].

- Giret, J.F et al. (eds) *Des formations pour quels emplois*. Paris: La Découverte, 2005a.
- Giret, J.F.; Moullet, S. L'adéquation formation-emploi après les filières professionnelles de l'enseignement supérieur. In: Giret, J.F et al. (eds) *Des formations pour quels emplois?* Paris: La Découverte, 2005b.
- Gosling, D. Educational development units in the UK: what are they doing five years on? *International Journal for Academic Development*, 2001, Vol. 6, No 1, pp. 74-90.
- Hadji, C. et al. *Étudier dans une université qui change. Le regard des étudiants de trois régions d'Europe*. Grenoble: Presses Universitaires de Grenoble, 2005.
- HCEEE – Haut Comité éducation-économie-emploi. *Construction des qualifications européennes*. Proceedings of the conference on Construction of the European qualifications organised by HCEEE and BETA Céreq in Strasbourg, 30 September and 1 October 2004. Paris: HCEEE, 2005.
- Jones, B.; Idol, L. *Dimensions of thinking and cognitive instruction*. Hillsdale, NJ: Erlbaum, 1990.
- Katz, R. *Dancing with the devil: information technology and the new competition in higher education*. San Francisco, CA: Jossey-Bass, 1999.
- Keating, J. et al. *Comparative study of vocational education and training systems: national vocational education and training systems across three regions under pressure of change*. Kensington: Australian National Training Authority, 2002.
- Kirsch J-L. *L'Europe des certifications: de Rome à Copenhague en passant par Lisbonne*. Marseille: Céreq [forthcoming] (Relief).
- Kok, W. *Jobs, jobs, jobs, creating more employment in Europe*. Report of the Employment Taskforce chaired by Wim Kok. Luxembourg: EUR-OP, 2003.
- Kok, W. *Facing the challenge: the Lisbon strategy for growth and employment. Report of the High Level Group chaired by Wim Kok*. Luxembourg: EUR-OP, 2004. Available from Internet: http://ec.europa.eu/growthandjobs/pdf/kok_report_en.pdf [cited 16.4.2007].
- Knapper, C. Three decades of educational development. *International Journal for Academic Development*, 2003, Vol. 8, Issue 1 and 2, pp. 5-9.
- Kreber, C. Teaching excellence, teaching expertise and the scholarship of teaching. *Innovative Higher Education*, 2002, Vol. 27, No 1, pp. 5-24.
- Lainé, F. De la spécialité de formation au métier. In: Giret, J.F. et al. (eds) *Des formations pour quels emplois?* Paris: La Découverte, 2005.

Lassnigg, L. Projections of qualifications and occupations in Austria: short-termism, macro perspective and emphasis in the supply side. In: Elgar, E. *Forecasting labour markets in OECD countries*. Paris: OECD, 2002.

Lemistre, P. Dévalorisation des diplômes et accès au premier emploi. *Revue d'économie politique*, 2002, No 1, pp. 37-58.

Leney, T. et al. *Achieving the Lisbon goal: the contribution of VET*. Report to the European Commission. The Lisbon-to-Copenhagen-to-Maastricht Consortium Partners. London: QCA, 2004, pp. 14-24 (chapter 2).

Leplâtre, F. VKE, the validation of knowledge acquired through experience, is one year old. *Actualité de la Formation Permanente*, 2003, No 182, pp. 18-23.

Lessard, C. Le groupe Holmes: sa vision de l'enseignement et de la formation à l'enseignement aux Etats-Unis. *Politiques d'éducation et de formation: les nouveaux profils des métiers de l'enseignement*, 2002, Vol. 5, No 2, pp. 13-26.

Lieberman, D.; Guskin, A. The essential role of faculty development in new higher education models. In: Wehlburg, C. (ed.) *To improve the academy: resources for faculty, instructional and organizational development (Vol. 21)*. Bolton, MA: Anker, 2002, pp. 257-272..

Masjuan, J. La construction de l'Espace Européen de l'enseignement supérieur: mythe ou réalité? In: Hadji, C. et al. (eds) *Étudier dans une université qui change. Le regard des étudiants de trois régions d'Europe*. Grenoble: Presses Universitaires de Grenoble, 2005, pp. 254-280.

Mercado, A.; Planas, J. Evolución del nivel de estudios de la oferta de trabajo en México: una comparación con la Unión Europea. *Revista Mexicana de Investigación Educativa*, 2005, Vol. X, No 25, pp. 315-343.

Merle, V.; Bertrand, O. Comparabilité et reconnaissance des qualifications en Europe: instruments et enjeux. *Formation Emploi*, 2003, No 43, pp. 41 56.

Miller, R. Why measure human capital? In: Fries Guggenheim, É. (ed.) *Agora V: identification, evaluation and recognition of non-formal learning: Thessaloniki, 15-16 March 1999*. Luxembourg: EUR-OP, 2002, pp. 33-48 (Cedefop Panorama series, 45). Available from Internet: http://www2.trainingvillage.gr/etv/publication/download/panorama/5132_en.pdf [cited 16.4.2007].

Moncel, N. *Intégration des jeunes dans l'entreprise multinationale: l'effet sociétal persiste-t-il?* Conference: travail, emploi, salaire et qualification en Europe: forces d'inertie, tendances communes et degrés de convergence? Organised by the Groupe de recherche sur l'éducation et l'emploi (GRÉE) in Nancy, 8 and 9 June 2006.

Neave, G. The European dimension in higher education: an excursion into the modern of historical analogues. In: Huisman, J. et al. (eds) *Higher education and the nation State: the international dimension of higher education*. London: Pergamon for the International Association of Universities, 2001.

OECD. *Definition and selection of competencies: theoretical and conceptual foundations*. Paris: OECD, 2002 (DeSeCo Strategy Document).

OECD. *The role of qualification systems in promoting lifelong learning*. Paris: OECD, 2006 (in print).

OECD. *OECD project on recognition of non formal and informal learning*. Paris: OECD, 2007 (project underway). Available from Internet: http://www.oecd.org/document/25/0,2340,en_2649_33723_37136921_1_1_1_1,00.html [cited 10.5.2007].

Paris, S.G.; Winograd, P. Promoting meta-cognition and motivation of exceptional children. *Remedial and Special Education*, 1990, Vol. 11, Issue 6, pp. 7-15.

Phelps, R. et al. Teachers and ICT: exploring a meta-cognitive approach to professional development. *Australasian Journal of Educational Technology*, 2004, Vol. 20, No 1, pp. 49-68. Available from Internet: <http://www.ascilite.org.au/ajet/ajet20/phelps.html> [cited 16.4.2007].

Planas, J. et al. Skills market, dynamics and regulation. In: Descy P.; Tessaring, M. (eds) *Training in Europe: second report on vocational training research in Europe 2000: background report; Volume 2*. Luxembourg: EUR-OP, 2001, pp. 313-382 (Cedefop reference series).

Poumay, M. *Le classroom assessment dans l'enseignement supérieur: diagnostiquer des faiblesses dans son enseignement*. LabSET. Liège: Université de Liège, 2005.

Rodrigues, M.J. (ed.) *The new knowledge economy in Europe: a strategy for international competitiveness and social cohesion*. Aldershot: Elgar, 2002.

Rychen, D.S.; Salganik, L.H. (eds) *Key competencies for a successful life and a well-functioning society*. DeSeCo. Göttingen: Hogrefe and Huber, 2003.

Salais R. Incorporating the capability approach in the employment and social policies. In: Salais, R.; Villeneuve, R. (eds) *Europe and the politics of capabilities*. Cambridge: Cambridge University Press, 2005, pp. 283-300.

Salais, R.; Villeneuve, R. (eds) *Europe and the politics of capabilities*. Cambridge: Cambridge University Press, 2005.

Scharpf, F. *Governing in Europe: effective and democratic?* Oxford: Oxford University Press, 1999.

Schleicher, A. *The economics of knowledge, why education is key for Europe's success.* Brussels: Lisbon Council, 2006 (Policy Brief). Available from Internet: http://www.lisboncouncil.net/force-download.php?file=/media/publications/lisbon_council_economics_of_knowledge.pdf [cited 16.4.2007].

Schön, D.A. *The reflexive practitioner: how professionals think in action.* New York: Basic Books Inc, 1983.

Sellin, B. *Scenarios and strategies for vocational education and lifelong learning in Europe: summary of findings and conclusions of the joint Cedefop/ETF project (1998-2002).* Luxembourg: EUR-OP, 2002. (Panorama Series 40).

Sen, A. *Commodities and capabilities.* Oxford: Oxford University Press, 1985.

Sen, A. *Inequality re-examined.* Oxford: Oxford University Press, 1992.

Stern, N. *Stern review: economics of climate change.* London: HM Treasury, 2006.

Sultana, R. The EU and its educational agenda: a wolf in sheep's clothing? In: Watson, K. et al. (eds) *Education dilemmas: debate and diversity. Volume 3: Power and responsibility in education.* London: Cassel, 1997, pp. 65-73.

Surry, D.; Robinson, M. A taxonomy of instructional technology service positions in higher education. *Innovations in Education and Teaching International*, 2001, Vol. 38, No 3, pp. 231-238.

Théry, M. et al. *L'Europe de la formation tout au long de la vie reste à construire.* Paris, 2002 (Céreq Bref, No 187).

Trigwell, K. et al. Scholarship of teaching: a model. *Higher Education Research and Development*, 2000, Vol. 19, No 2, pp. 155-168. Available from Internet: <http://www.clt.uts.edu.au/Scholarship/A.Model.html> [cited 16.4.2007].

Trigwell, K.; Shale, S. Student learning and the scholarship of university teaching. *Studies in Higher Education*, 2004, Vol. 29, No 4, pp. 523-536.

UNDP. *Human development report 2005: international cooperation at a crossroads: aid, trade and security in an unequal world.* New York: UNDP – United Nations Development programme, 2005. Available from Internet: http://hdr.undp.org/reports/global/2005/pdf/HDR05_complete.pdf [cited 16.4.2007].

Van Tartwijk, J. et al. *Typologie de portfolios électroniques*. European Schoolnet (EUN), 2005.

Vincens, J. Changes in education and in education systems. *European Journal Vocational training*, January-April 2002, No 25, pp. 9-26. Available from Internet: http://www.trainingvillage.gr/etv/Upload/Information_resources/Bookshop/290/25-EN.pdf [cited 16.4.2007].

Vincens, J. L'adéquation formation-emploi. In: Giret, J.F. et al. (eds) *Des formations pour quels emplois*. Paris: La Découverte, 2005, pp. 149-162.

Vinokur, A. *Global and local tendencies in the restructuring of educational systems*. TACIS: EDRUS (Education Management in Russia). Research Seminar in Moscow on 15 and 19 December 1998. Published as mimeograph, 1999.

Vinokur, A. De la scolarisation de masse à la formation tout au long de la vie: essai sur les enjeux économiques des doctrines éducatives des organisations internationales. *Education et sociétés*, 2003, No 12, pp. 91-104.

Winterton J.; et al. *Typology of knowledge, skills and competences: clarification of the concept and prototype*. Luxembourg: EUR-OP, 2006. (Cedefop Reference series, 64).

Lopez-Claros, A. et al. *Global competitiveness report 2005-2006: policies underpinning rising prosperity*. World Economic Forum. Basingstoke: Palgrave Macmillan, 2006.

Young, M. Vers un cadre européen des qualifications: quelques mises en garde. In: HCEE. *Construction des qualifications européennes*. Proceedings of the conference on Construction of the European qualifications organised by HCEEE and BETA Céreq in Strasbourg, 30 September and 1 October 2004. Paris: HCEEE – Haut Comité éducation-économie-emploi, 2005.