

1. Policy Brief - Emerging Skills and Competences - A transatlantic study

This section provides a summary on a comparative study on institutional and policy approaches to addressing emerging new skills needs in Europe and in the USA.

The past 25 years has seen major economic transformations in Europe and in the United States. The economies of Europe and the USA have to a large extent gone through similar changes. Whereas the EU and the USA previously relied on the dominance of agriculture, fishery and manufacturing, the economies in both the USA and in Europe have become much more service-intensive, enabled not least by the penetration of ICT. This has allowed companies to deconstruct integrated value chains and outsource a range of work functions where the most favourable cost/quality solution could be found. The developments have on one hand led to growth in low value-added manual service jobs, but on the other hand increased the demand for sophisticated skills required to implement and manage the technology. Changes driven by the deployment of ICT and increasing globalisation have at the same time led to a stronger transatlantic socio-economic integration.

Both in the USA and in the EU there has been a growing debate and concern whether education and training systems sufficiently equip young people with the right skills for the 21st century work place and a world, which is increasingly complex – and interconnected. A strong skills base is in this sense increasingly seen as a lever of sustainable competitiveness driven by changing globalisation dynamics and ICTs, as a critical parameter to. Numerous committees, alliances in the EU and in the USA calling for improved responsiveness in education and training systems to be geared to what has been defined as the knowledge economy.

In 2006, an agreement was signed between the EU and the USA renewing the co-operation programme in higher education and vocational education and training. One of the aims of the agreement in addition to exchanges and development of curriculum has been to enable policy dialogue on common priority issues.

In 2009, the first policy dialogue on Education and Training was held within the transatlantic co-operation agreement. The anticipation and identification of emerging skills sets and educational models and practices conducive to the development of these emerging skills including assessment frameworks were some of the joint priorities identified. In the USA much of the debate has focused on the outcomes of the K12 system in the context of a changing economy. Within the community college system, ground-breaking work has been piloted to test new forms of assessments systems supportive of demonstrating 21st century skills in practice with support from the US department of Education as well as from private foundations. In Europe the Agenda for New Skills and Jobs provides a framework for a range of studies and awareness raising activities and pilot projects, all situated in the "Europe 2020" strategy for smart, inclusive and green growth and in the "Education and Training 2020" work program.

The policy discussion that took place during the meeting in 2009 resulted in a signed declaration with proposals for joint actions - one of those actions proposed being a study on approaches to the anticipation and identification of labour market skills and the assessment and recognition of these skills in the USA and in the EU.

Subsequently a comparative and exploratory study was commissioned aimed to:

... review and compare promising practices in the field of anticipation, identification and validation of skills to match emerging labour market needs and to make education and training systems more relevant and more responsive. The study should also analyse areas where a convergence of efforts could be noticed to move to education, training and qualification systems based on competencies and learning outcomes.

1.1 Methodology

The study was originally envisaged to be carried out by a team of American and European researchers. Due to budget constraints at the time the study was launched, the European team has undertaken both the US and the EU components of the study.

The study consists of the following elements:

- **Seven case studies**, three in the USA and four in Europe, to illustrate the span in approaches to anticipation of skills and other methods to improve the responsiveness of education systems spanning vocational education, workforce development, and higher education in the United States and in Europe. In addition, some examples of practice have been included in the main report.
- A total of **23 interviews** were conducted with relevant actors in the field of transatlantic collaboration on education:
 - European experts in education;
 - American experts in education;
 - European project managers of transatlantic collaboration programmes;
 - American project managers of transatlantic collaboration programmes;
 - HR-representatives or innovation directors of multinational companies with locations in the USA and in Europe;
 - Former exchange students.
- An inventory on anticipation and forecasting of skills needs in the EU.

Case studies and respondents were chosen in consultation with the European Commission. The study team comprises Pat Irving from GHK who carried out the inventory study, and John Lauritzen and project manager Hanne Shapiro, Danish Technological Institute, who carried out the other components of the study and wrote the main report.

From the outset, the European Commission and the US Department of Education have emphasised the exploratory nature of the study aimed to feed into the ongoing policy debate between the US Department of Education and the European Commission as well as into future joint curriculum projects and exchanges. It is important to bear in mind that the variations of both policies and institutional practices across the United States and in Europe are considerable. The study thus highlights some trends, rather than providing an in-depth analysis on topics pertaining to new skills for new jobs.

1.2 Key Findings

The debates on the EU framework initiative *New Skills for New Jobs* and the US initiative on *21st century skills* have evolved as part of the discourse about the combined effects of new patterns of globalisation, developments of ICT, and liberalisation of trade. In particular the second and third wave of outsourcing in combination with the rapid growth of the tertiary education sector in Southeast Asia has led to a growing concern about whether the education and training systems are sufficiently geared to meet the changing demand for skills and as a prerequisite to future competitiveness. On both sides of the Atlantic, institutions and industry representatives see key competences and/or 21st century skills as the key to future employability. The human capital and skills-driven logic of education has become more dominant in the public discourse, driven especially by industry groups and to some extent at the expense of the broader personal value of education, as some respondents comment the situation.

In the USA, the broad policy debate on 21st century skills has its roots in the development of the K-12 system and its aims to ensure that high school graduates have the skills and competences necessary for employment and employability. In Europe, key competences are embedded in European lifelong learning strategies from early age to post-retirement, in that context with a dual

emphasis on employability as well as key competences for active citizenship. As in the USA, industry has here played a strong role in highlighting the changing nature of skills and the needs for educational reform. Both in the USA and in the EU, employer groups have sponsored surveys to further position and advocate the need for change and reform of education systems to better promote a changing skills agenda with a stronger emphasis on a broader foundation of skills and competences and as a precondition to succeed in the 21st century workplace. Newer reports and country studies illustrate how key competences are emerging in continuing education and training measures in the EU, especially in the context of skills and competences pertaining to employee and market-led innovation. In a number of states in the USA, regional economic development initiatives have been implemented in which education policies, labour market policies, and economic policies are aligned in coherent integrated strategies. It is characteristic that many of these initiatives build on the assumptions about the importance of broader foundation skills - in the USA called 21st century skills - and with a focus on career clusters and in many instances in support of cluster policies. Yet the debate on employee-led innovation – or innovation from the shop floor - and the role of workforce development is referred to less frequently by US experts and industry and institutional representatives, although the notion of the high performance workplace has been prominent in US workforce development initiatives for many years. One explaining factor could be the visibility of lifelong learning policies in the EU - more recently also in the discourse of the nature of service innovation and organisational innovation (DG Enterprise 2011). In Europe, debates and initiatives to address changing skills needs tend to be more policy driven than in the USA. However, both in the USA and in the EU, various industry groups have actively promoted the changing skills agenda. In the EU, the European framework for lifelong learning and supportive instruments such as the European Qualification Framework (EQF) have had an enabling impact on national policies and institutional practices, which would not be seen in the USA according to interviewed experts due to the different roles that public policy plays in reforms of the tertiary education system.

External partnerships are perceived by both the American and European stakeholders as playing a central enabling role in realising learning environments, offering students opportunities to acquire 21st century skills through real-world challenges and problems. Experts, industry, and educational providers on both sides of the Atlantic recognise that public-private partnerships and an entrepreneurial culture are deeply grounded in the institutional fabric in the USA institutions. In recent years both the European Commission and Member States have actively supported a stronger university industry co-operation aligned also to policies and actions in support of a stronger entrepreneurial culture in Europe, the Year of Creativity, Entrepreneurship and Innovation in 2009 being just one example.

The European Commission has commissioned a range of European skills anticipation studies at the sectoral level, and with Member States and social partners a number of awareness and dissemination activities have taken place. Cedefop, the European agency on vocational education, has played a pivotal role in stimulating the awareness and uptake of good practices on early anticipation at Member State level. It is furthermore characteristic that the strong involvement of the social partners in many of the initiatives has substantially contributed to the uptake of anticipation methods in national and regional education and labour market policies, and more recently also as a component in innovation policies (Shapiro 2010). In the USA the federal and the state role in tertiary education is minimal, whereas numerous forecasting studies and labour market projections are undertaken as part of labour market policies in the USA, also at a federal level. In order to support employment policies, the US Department of Labor has developed a very comprehensive searchable database on labour market projections, and it manages O*NET, the primary source of occupational information. Several organisations and regional authorities are using O*NET to project changes in occupational profiles. One project involving US Department of Labor (DOL) and several other organisations has linked O*NET data with Bureau of Labor Statistics (BLS) occupational projections in order to project future skill demands and potential skill gaps in different states. O*NET offers a range of services useful to job seekers, employers, for career guidance purposes, and for education and training providers - particularly to plan workforce development. Within the O*NET framework, research projects are continually commissioned to ensure that the occupational classification in O*NET matches the dynamics of the labour market. The department of Labor has

for example commissioned studies to capture and assess the impact of the greening of the economy. Another example is a study commissioned under president George W. Bush linked to the presidential Job Growth initiative. Information from O*NET and data from the BLS and the Census Bureau are used to analyse supply and demand of skills in local labour markets (Tsacoumis 2007).

In a number of EU countries the ongoing monitoring of labour markets to better capture emerging skills demands has become very elaborate in recent years. Examples of these are the UK sector Skills Councils, *FrequenzNet* in Germany, and the Irish Sector Futures Groups supported by FAS. Studies are regularly commissioned in a range of countries not only as part of education and active labour market policies, but also at times to inform regional innovation policies or as part of cluster support initiatives. One of the European case studies on the automotive sector comprises a number of regional studies. In several states in the USA forecasting of skills often occur as the basis for large scale economic development initiatives, often driven by restructuring efforts and as the basis for planning workforce development. Both in the USA and in Europe there are several multi-disciplinary research environments concerned with the linkages between a changing economy and its impact on jobs and skills. At the end of 2005 the European Commission DG Employment and US Department of Labor took joint initiative to convene researchers and policy analysts to discuss approaches to addressing changing skills needs in the context of global sourcing.

Competence and outcome based education models have led to a quest for new approaches to assessments. In Finland for example, assessment in tertiary vocational education – the polytechnics, - has shifted from traditional testing to what is called local demonstration assessments, and in Denmark self-assessment has become an important part of promoting learning-to-learn competences in upper secondary vocational education. Nevertheless, in the publication on the Shift to Learning Outcomes in Europe (Cedefop 2009c), the authors conclude that new models of assessments only emerge slowly. There are similarities in approaches and rationale for such efforts in the EU and the USA, such as improving access for disadvantaged learners by recognising learning that has occurred in informal or non-formal settings, increasing the efficiency of workforce development measures, or demonstrating accountability in terms of demonstrating the outcomes and impact of a particular measure. At the institutional level, multiple projects have been implemented both in the EU and in the USA to improve assessment methods so individuals improve their opportunities to document their full set of skills and competences regardless of how they have been obtained. One of the methods used on both sides of the Atlantic is 'e-portfolios'. From the study, a number of themes emerge where the EU-US co-operation on education could provide a unique platform for further analysis and development of innovative approaches pertaining to a 21st century agenda on education and lifelong learning.

1.3 Conclusions and recommendations

From the background literature study and the interviews and case studies a number of themes emerge, which could inspire further actions in the transatlantic co-operation either implemented through the programme measures or through the ongoing strategic policy dialogue. On the one hand, convergence can be noted in a range of areas pertaining to the debate about changing skills and jobs; on the other hand, there are fundamental differences in institutional practices and in policies. The EU-US partnership in education could therefore be an ideal teaching and learning innovation platform for both practitioners and policy makers, further exploring institutional processes and practices for promoting key competences/21st century skills in post-secondary education - be it upper secondary vocational education or tertiary education. The partnership could also be a platform for collecting more evidence on a range of topics related to the agenda of changing skills and competences.

This could be done through a strong connection between pilot projects, commissioned studies linked to the pilots - and as a third element policy dialogues also involving external stakeholders.

1.3.1 Multi-cultural and international key competences

Key competences and 21st century skills are to a great extent driven by a growing awareness of the impact of globalisation in terms of the overall job turnover and reconfiguration of labour markets.

Graduates from vocational education institutions and from universities can increasingly expect to deploy a broad set of competences in all professional areas, and many will at some point in life work in an international company as part of their career trajectory. The institutional focus on key competences and on 21st century skills is an important step in that direction, as is international mobility, but few students are likely to have such an experience through their study. Key competences are not just employment related, but are also associated with civic engagement and community development in Europe as well as in the USA.

1.3.2 Key competences and 21st century skills - of growing importance across the Atlantic

Company staff, institutional representatives, and students see key competences and United States 21st century skills as being of growing importance for employability. Only a few mention the importance of key competences for civic engagement and personal growth. However, a few European institutional representatives are concerned about the risk that the increasing emphasis on employability will lead students to become much more instrumentalist in their view of education- and as such lose out on personal growth opportunities. Several mention that exchange programmes span opportunities for personal growth as well as employability because students are brought in situations that are unfamiliar to them in many dimensions. Nevertheless, among the institutional representatives interviewed there is not much evidence that the notion of key skills/ 21st century skills has been an explicit focus in existing transatlantic partnerships.

The study shows that the debate about competence based education has been more critical in the USA and has raised important and fundamental questions about evidence and justifications of the value added of competence based approaches. Competence and outcome based approaches have ramifications on teacher qualifications and assessment approaches, an area of concern in both the USA and in the EU (Cedefop 2009c; OECD 2010).

Both EU and US institutions recognise that key competences are critical to students' future employability. Some teachers believe that key competences cannot be acquired in an institutional setting whilst others recognise that a growing emphasis on key competences/21st century skills will require changes in the design of teaching and learning processes and teachers' qualifications. However, there is little evidence that these emerging trends are a central feature in existing projects and transatlantic partnerships.

Proposal for joint action

Several interviewees have advocated the need for a fundamental shift in teaching and learning environments if education is going to play a more systemic role in furthering an entrepreneurial mind-set in students. In particular, the MIT and the Aalto case studies are best practice example of how deep transformation of institutional cultures and practices requires leadership and commitment, but that such transformation processes also yield major benefits for students, teachers and external stakeholders. The transatlantic partnership between the US Department of Education and the European Commission, DGEAC, could provide a strategic framework for testing and measuring the impact of innovative organisational and pedagogic models to develop and sustain entrepreneurial institutional cultures including partnership models and aspects relating to the training of teachers.

Some of the characteristics of such learning environments are:

- Research-informed teaching uses action-based research models in multi-disciplinary learning processes to help solve complex, comprehensive, and interconnected problems;

- Learning beyond the campus walls and in new partnership models;
- Discovery which is useful beyond the academic community and service that directly benefits the public;
- Students working on projects with real clients, applying their specialist subject skills and receiving course credits for their work. The community becomes part of the teaching process and benefits from the students' work;
- New boundary crossing organisations and structures are developed as part of the learning environment;
- ICT is an integrated feature in teaching and learning processes.

Within the action line of joint development of curriculum, funding could be prioritised to carry out a feasibility study to explore opportunities for developing transatlantic curriculum that builds on teaching and learning in multidisciplinary problem-based settings. Changing teaching and learning environments demand new teacher qualifications and assessment models.

The transatlantic co-operation could provide an ideal framework for pilot activities with focus on innovative methods of teacher training enabling teachers to design teaching and learning processes based on a key competences/21st century skills approaches. In that context it would be of value to analyse and collect best practice examples of tests and final exams that mirror the growing focus on key competences/21st century skills. The activities and outcomes of the Working group on Assessment of Key Competences set up by the European Commission could provide a valuable contribution to such joint work.

It is also proposed to conduct a joint study to thoroughly assess benefits and barriers to competence based higher education and vocational education from the perspective of teachers, students, researchers, and industry, with a view to expanding the evidence base on competence based education and its value added. One of the key themes to be addressed is the feasibility of mainstreaming and scaling competence based education and assessment approaches within the existing institutional regimes.

1.3.3 Accountability and performance

It is interesting to note that several informants in both Europe and the USA see American students as much harder-working and disciplined about their studies. An American visiting professor is discouraged with what he perceives as a lack of performance culture, judged from his experiences as a visiting professor in a Nordic business school.

"It is hard to ensure progress and student excellence, because students are left far too much to decide for themselves and against their own good for example if they wish to show up to a class or not, or how much work they put into an assignment- and you are not supposed to pace the students to make them excel, and there is a lack of a professional culture even when it comes down to whether standard technical equipment works or not."

- American visiting professor

There are several factors that could be at play, according to some sources, for example differences in financing. European education policies differ in many respects from American policies in the provision of higher education studies: higher education institutions in Europe are predominantly publicly funded, somewhat similar to how compulsory K-12 education is funded in the United States. It is suggested that a sense of public entitlement and taxpayers' rights to accountability therefore permeates Europe and the accountability culture in European higher education, at times leading to micro-management according to some respondents. In the USA, private and state higher education institutions, which includes community colleges, tend to be run much more independently of federal and state authorities, although it should be noted that across the EU, reforms in the higher education sector have resulted in much larger institutional autonomy, and in some countries, for example the Netherlands, have resulted in more market-led structures,

The areas in which institutional autonomy has been strengthened differ from country to country. In Germany the first major step was the shift from earmarked funding to block grants, whereas the UK reform of the university sector initially focused on four key areas: (1) capacity and capability building; (2) accountability to stakeholders; (3) staff equality and diversity; and, (4) sustainable human resources management (Maassen 2006). In the USA the institutional accountability culture is primarily focused on the different sponsors - the students and their parents, former alumni, foundations, etc. Some respondents therefore suggest that American higher education institutions by definition focus on strong relations with external partners. A European institutional representative states that the nature of external relations is at times “as a marriage enacted by government” and mandated by legal statutes.

Some informants believe that different funding regimes of higher education are the key reasons to different approaches to performance orientation in the USA and in Europe.

The differences are perceived as having a major impact:

“Here in Denmark - they do nothing but check, check, check – the government decides on everything, there is so little autonomy compared to in the USA, so I really think it kills innovation and excellence - even impacting the professionalism of the support infrastructure in a negative way.”

- American visiting professor

Proposal for joint action

In Europe as well as in the USA, new student profiles are found in higher education institutions and in vocational education institutions. They can be part time, working, or they can have families influencing study behaviours. These new student profiles pose new requirements to institutional practices, but they also enrich the overall teaching and learning environment – especially as more experientially based education has come to play a stronger role. For these reasons there is also a joint interest in exploring the boundaries of competence and outcome based learning environments with a view to expanding educational opportunities for new target groups, but also in the context of developing learner-centred experience-based pedagogical models

In the USA, competence based assessment models tend to be situated between an accountability culture whereby on the one hand competence based assessments are used to inform quality improvements in teaching and learning approaches, and on the other hand are used as a means to improve access for non-traditional students. There is a growing body of knowledge on the correlation between employee driven innovation, key competences, and the quality of the learning environment- which applies to the highly skilled professionals as well as the shop-floor worker (OECD/CERI 2011). It is therefore proposed to jointly develop and test assessment models that can feed into quality development of competence and outcome based curriculum and into guidance models for non-traditional student cohorts.

Competence and outcome based education offers immense new opportunities for innovation in educational models and processes spanning informal, non-formal, and formal education and training. The study clearly shows that across the Atlantic it is widely recognised that competence and outcome based education holds many potentials that also challenge traditional educational practices. It would therefore be of advantage to set up a virtual transatlantic clearing house with the use of social media where practitioners, researchers, and policy makers could share resources and knowledge concerning the range of topics and tools linked to emerging skills and competence based education. Post-secondary institutions would benefit from a richer access to tools and methods that have been developed such as competence based assessments or personal competence portfolios, and from opportunities to share experiences with other institutional practitioners. For researchers and policy analysts this would provide a platform for sharing new research findings which could inform educational policy, and it would enable new research findings to be made available to educational practitioners.

1.3.4 Entrepreneurship in education

According to the informants interviewed, professors and teachers at community colleges in the USA more often have personal entrepreneurial experience than those in the EU. Sometimes they are entrepreneurs themselves, they may mentor start-ups, or they are involved in incubator environments on the campus. This allows for larger opportunities to integrate entrepreneurship in a structured real-life environment. Entrepreneurship education is increasingly changing from being taught as a subject where students acquire knowledge about entrepreneurship to a situation where entrepreneurship education is more project and case-based. In EU and in the US, entrepreneurship education is increasingly perceived as something broader than developing the skills to start a business.

Aside from specific projects on entrepreneurship education, entrepreneurship and innovation have so far not become more widely embedded in a wider range of joint projects in the transatlantic co-operation.

Transatlantic co-operation could be a unique framework for jointly developing generic models and multi-disciplinary curricula integrating entrepreneurship in natural sciences, creative arts, health services, and teacher education and training programmes, as these study areas in Europe tend to have been less of a priority than business and engineering studies. It could also be of value for institutions in the USA and in Europe collaborating on entrepreneurship education to jointly develop a network of former graduates who have become successful entrepreneurs in different fields and who are ready to function as mentors within the EU-US co-operation.

Proposal for joint action

At a policy level, it is proposed to identify, in collaboration with the Kauffmann Foundation¹, newer successful *next practice examples* on entrepreneurship education including social entrepreneurship aimed at untraditional target groups, not least youth at risk or the immigrant population. Broad dissemination of guidelines and good practices through different channels could stimulate the development of entrepreneurial components in the preparation and development of new joint programme initiatives, and could substantially contribute to policy developments in the field.

1.3.5 Anticipation of skills

Measures to anticipate skills are seen both in the United States and in Europe. The Department of Labor in the USA is the key actor in the projection of long term labour market forecasts. Very refined and searchable data are available on occupational projections, factors linked to labour force productivity, outcomes of workforce development, composition of the labour force, international labour force comparisons, etc. Sector-based anticipation studies such as those commissioned by the European Commission are generally not found in the United States. At the state or the regional level there are several examples of how anticipation of skills is embedded in broader economic development initiatives. The *Michigan Works Association* and the *Michigan Skills Alliance* are just two examples of how public policy makers, employers, educators, and other types of organisations at the state level join forces to ensure the availability of a qualified workforce matching emerging demands. The European CLEPA Case study provides examples of how a European-wide initiative captures changes in the automotive industry within the context of restructuring. The study has an elaborated regional approach in regions where the automotive industry traditionally has played a strong role. In the review of literature, several examples of foundation-commissioned multi-disciplinary research and exchanges on the nature of change in workplaces and in jobs are found

¹ <http://www.kauffman.org>. The Kauffman Foundation is among the thirty largest foundations in the United States with an asset base of approximately \$2 billion. The key focus of the foundation is entrepreneurship policies and practices

on both sides of the Atlantic. It remains a question however, if the knowledge triangle - understood as the link between research, education and innovation - functions optimally. Interviews conducted with both US and European institutional representatives indicate that methodologies to anticipate skills and studies on anticipation are used to a limited extent by US and European institutions – one major exception being regional anticipation studies undertaken in the context of restructuring and workforce development in the USA.

Proposal for joint action

A recent study from the OECD suggests that those regions capable of integrating regional economic, labour market, and education policies are more successful in terms of sustainable development. On that background, it is proposed that the transatlantic partnership could provide a framework for mutual discussion and exchange of promising practices with a view to jointly developing integrated models for workforce development in the context of regional innovation. The role of vocational education provision to adults as part of the dynamics of regional innovation systems is a theme that seems so far to have been less addressed in the transatlantic partnership. The Network TA3², which is a partnership between USA community colleges and European technical colleges and *fachhochschulen*, could potentially be a fruitful platform for such a measure. In fact, the TA3 Alliance was originally funded with modest seed funding from US Department of Education and the European Commission, and is still running today.

This study includes innovative best practice examples of the role of post-secondary vocational institutions in regional innovation systems. It is proposed to build on such practices to organise a joint event with particular focus on how regional policy makers and education providers can use anticipation methods and existing studies as the basis for workforce development, and more broadly as input to formulation of demand-driven institutional strategies.

Proposals for Joint Action

All stakeholders agree that competences and abilities pertaining to an international mindset are of growing importance both for success in the 21st century workplace and as part of active citizenship. Study findings indicate that the international and multicultural dimension of exchange visits is primarily perceived as developing personal abilities, whereas other dimensions to internationalisation and multiculturalism - apart from language skills - seem to be less explicit for students and professors alike, except in business studies.

It is therefore proposed to jointly explore the nature of international and multicultural dimensions in curriculum in different programme streams (science, business studies, humanities, arts, engineering, and social sciences). Secondly, it is proposed to identify and test teaching and learning processes that are conducive to developing key competences /21st century skills relating to internationalisation and multiculturalism. The purpose would be to identify and develop some best practice examples that could strengthen the value of transatlantic exchange initiatives, for example also exploiting the use of ICT.

A high-level transatlantic policy seminar possibly with the involvement of other international stakeholders such as UNESCO, OECD, the World Economic Forum, and some of the bigger educational foundations, could be used to elaborate ideas and scenarios that could guide further development.

Labour markets are constantly changing and being reconfigured, shaped by a range of forces such as global specialisation, penetration of ICT in all parts of the economy, and more recently the great global challenges such as health, climate, and access to clean water. Capturing these changes in labour market monitoring systems on an ongoing basis poses a range of challenges to policy

² <http://www.ta3online.org/about/>

makers both in the EU and in the USA, particularly because traditional occupational classification systems and skills taxonomies are impacted. In the EU, one of the main initiatives under the umbrella of the Commission's New Skills for New Jobs initiative is the ESCO initiative involving DG Education and Culture and DG Employment (DG Employment 2010)³. The aim is to develop a multi-lingual methodology and taxonomy linking skills competences and abilities to occupations. The ESCO initiative marks the shift to the new labour market paradigm based on skills and competences rather than on traditional educational input measurements (qualifications). Coupled with an approach to measure educational attainment based on the European Qualification framework (EQF), the ESCO standard will create greater coherence between lifelong learning and employment policies.

Within the transatlantic partnership on education it is proposed to set in motion a high level initiative to share knowledge about the use of different research methods to identify emerging new occupations and shifts in occupations within the framework of respectively O*NET and the ESCO initiative. It would be of value to share promising practices on tools and strategies used to identify growth opportunities and project occupational growth as the economy recovers in the EU and in the USA. It would also be of value to avoid skills mismatches in the context of restructuring. To improve the impact of such an initiative it would be of benefit to involve the EU-US working group on employment and labour market related issues.⁴

³ EMPL D-3/LK D(2009) ESCO Facts Sheets

⁴ The U.S. — EU Working Group on Employment and Labor-Related Issues was established in 1996