T⋃ning Journal
for Higher Education

New profiles
for new societies

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Issue No. 1, November 2013

Tuning Journal for Higher Education (TJHE) is a biannual peer reviewed journal that facilitates the collaborative efforts of hundreds of international researchers who are working to develop Tuning in global higher education.

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Paul D. Ryan

Editor

The Tuning Journal for Higher Education (TJHE) is a joint project of the Tuning Academy, the University of Deusto, who host the journal, and the University of Groningen. It is intended to be a platform for research and discussion on the student centred, competence and learning outcome based reforms of higher education programmes that are currently sweeping the world.

Although TJHE will benefit from the experience of those academics that have engaged since 2000 in the 'Tuning phenomenon' — the many university driven projects fuelling such reforms — it is open to all academics, administrators and policy makers. The prime intention is to promote research into this field and subject the tools developed during these and other projects to full academic scrutiny and debate.

Tuning has from the outset been generously supported by the European Commission and in recognition of the spirit in which that support was given the journal will be truly open access (no individual charges for submission or access) for the foreseeable future. ISI registration will be applied for as soon as the journal qualifies.

I have pleasure, on behalf of the Editorial Board, in inviting submissions from all those working to improve the quality, transparency, transferability and relevance of higher education programmes and who wish to share their experience with the global community via the pages of this journal. Full details can be found at www.tuningjournal.org.

Articles

New Programme Profiles for a New Society:
An Introduction

Julia González, Paul D. Ryan, and Robert Wagenaar

Higher education is fundamental to both national[1] and global contemporary knowledge economies.[2] It is also a driver for social change (see for example[3,4,5]) which crucially includes making higher education available and relevant to a wider section of society and improving the mobility and relevance of its graduates in the workplace. New tools are required to integrate such developments with the sector's traditional functions of teaching and research. However, every student is different, each programme is different, each university is different and the needs of professions and nations also differ. Therefore, research leading to the development of such tools is fundamental to the development of modern society. One such tool, whose importance has recently been recognised, is the use of profiles at institutional, regional (geographic, cultural or discipline) and programme levels. Such profiles are a concise, precise and portable description of the particular academic entity. They have diverse uses ranging from ranking of institutions, aiding academic programme selection by a student, facilitating graduate mobility and as a tool for professional accreditation. We have, therefore, selected the topic of profiles for the first issue of the Tuning Journal for Higher Education. Whilst we cannot hope to cover the totality of this subject in one issue, we trust that it will stimulate debate and further promote research on the types, design and uses of profiles.

The first and perhaps the most important question we address is what should be profiled? Van Vught and Huisman discuss the importance of institutional profiles. In a world increasingly obsessed with rankings, the current metrics used ignore 97% of the world's higher education institutions

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[1] White House, "Education," http://www.whitehouse.gov/issues/education

[2] Paul Temple, ed., *Universities in the Knowledge Economy: Higher Education Organisation and Global Change* (Florence KY: Routledge, Taylor & Francis Group, 2011).

[3] Australian Government's Department of Education Employment and Workplace Relations, http://www.deewr.gov.au/HigherEducation/Documents/TransformingAusHigherED.pdf

[4] European Commission, "The Bologna Process — Towards the European Higher Education Area," http://ec.europa.eu/education/higher-education/bologna_en.htm

[5] John Brennan, "Higher Education and Social Change," *Higher Education* 56, no. 3 (2008): 381-93.

and have no clear link with the quality of an individual educational programme or the needs of the student.[6] Institutional profiles provide a means whereby an institution can clearly state how well it achieves its aims, thus establishing its place in a multidimensional educational hierarchy.

The matter of how to build discipline profiles is discussed by González and Yarosh. They propose a new method, which relies upon a full analysis of the core competences within a discipline. A criticism of profiles is that they can contain a long and lacklustre lists of competences, often derived from a template developed elsewhere, that fail to capture the essence of the particular discipline. Grouping these competences into interlinked groups of meta-competences and then using these groups to define a meta-profile capturing the essence of the discipline (at subject template level) or the programme (at programme profile level) requires informed debate.

Wagenaar addresses the complex issue of how decisions made in an international political forum, in this instance that of the Education Ministers of Europe, can be translated into acceptable and practical actions to be undertaken by academics. He traces the evolution of the international tools associated with the Bologna Process and analyses the difficulties in applying them at the level of a particular higher education sector or programme. He argues that the development of programme profiles requires new sectoral profiles or frameworks, which are compatible with international qualifications frameworks and discusses the evolution of such profiles, which have been developed in the framework of the recent Tuning-HUMART SQF project.

Profiles must be portable to be of value in the new globalized society. However, it is probably not possible or useful to try to design a single global profile for a given discipline. It is, therefore, important that the regional extent of any given profile is understood. Thus, regionalization in modern higher education is a fundamental context into which any profile must be placed. Knight analyses modern trends of regionalization in global higher education and provides a new conceptual model for its understanding.

Although all aspects of proper profile design are related to the needs of society and employability, it is important that such designs are evidence based. Avvisati, Jacotin and Vincent-Lancrin analyse the findings of two major global surveys of recent graduates. They conclude that the much sought after competence for innovation, required to drive knowledge economies, is not solely developed within Science, Technology, Engineering

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[6] Andrejs Rauhvargers, "Global University Rankings and Their Impact," Report. Brussels: European University Association asbl, 2011, http://www.eua.be/pubs/Global_University_Rankings_and_Their_Impact.pdf

and Medicine (STEM) programmes and that a research agenda is required to evaluate the best mix of skills required for its promotion.

It is impossible to consider the current reforms in global higher education without reference to the various Tuning programmes around the word. Whilst many articles make reference to the role of Tuning, that by Doná della Rose and Haug provides an overview of the profiling of higher education programmes throughout Europe from 2000 to 2011 and an assessment of its impact in Europe and beyond. The article also outlines the new challenges that now need addressing.

The final three articles deal with the progress and innovations being made by Tuning programmes around the world. Alarcón, Beneitone, de Armas, Franco, Suñé and Veneros discuss the development of a common academic credit system (CLAR) throughout 18 countries and 15 subject areas in Latin America, which is based upon level and student workload. This credit system, like the ECTS system in Europe, is essential for the portability of qualifications and the development of new interdisciplinary programmes. The careful methodology presented provides a template for those regions which do not currently have such credit systems. Hahn and Teferra present the state of higher education in Africa and review various initiatives designed to achieve harmonisation. They then present the current results of the Tuning Africa project and present the African approach to 'Tuning'. This interesting analysis of on-going work emphasises how such methodologies must adapt to serve the needs of regions in an ever-changing society. Karavayeva and Kovtun report on progress made by the Tuning Russia project. In particular they highlight the difficulties and advantages of integrating a methodology driven by academics, like the 'Tuning Method' for programme design, with Russian Federal State Education Standards. Their discussion on the need to carefully evaluate key competences and to reconcile those with the academic norms of their society provides useful insights and links nicely with the need for meta-profiles describes above by González and Yarosh.

Further research is essential. Not only do we need for each region, each profession and programme within that region (see for example[7]) and each institution globally to adopt profiling, but these profiles must be transparent and transportable. Without such a tool we face the possibility of a globalized economy only in the sense of the movement of products and services and not of expertise. However, it is the mobility of this very expertise, linked with cross-cultural and interdisciplinary innovation, upon which the new knowledge based society depends.

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[7] European Accredited Geological Study Programmes (Euro-Ages), http://www.euro-ages.eu/

Institutional Profiles: Some Strategic Tools

Frans van Vught and Jeroen Huisman

Abstract: In this paper we argue that both internal and external pressures and conditions urge contemporary higher education institutions to carefully think through their institutional profiles positions in domestic and global higher education contexts. We subsequently analyse strategic positioning from the strategic management literature and offer four tools — mapping, multi-dimensional ranking, benchmarking and degree profiling — to assist higher education institutions in their profiling and positioning strategies.

Keywords: innovation policy, activity and performance profiles; strategy; autonomy; mapping; ranking; benchmarking; degree profiles.

I. Introduction: the role of higher education in the knowledge economy

There is an observable trend in many countries towards de-industrialisation and a corresponding government concern about how to promote innovation and technological change as a principal means of sustaining international competitiveness. Natural resources are no longer the dominant factor in economic growth. Goods, services, capital, labour, and knowledge move around the world with increasing speed and markets become increasingly interconnected and globalised. Generally speaking, it appears that globalisation leads to increasing national specialisation. This process of specialisation, which is amplified by scale and learning effects, creates a reallocation of production processes between countries and forces nations to look for their international comparative advantages. Given this situation, national governments try to identify and develop their specific strengths. They try to increase their location attractiveness for business firms; they try to attract mobile production factors; they develop their socio-cultural profiles; and they try to increase their innovation capacity. Many nations now seek to promote innovation as a key driver of economic growth. In particular Western industrialised nations try to find their comparative advantages in the production of knowledge-intensive goods and services. To better compete in a globalised economy they increasingly focus on knowledge, creativity and innovation, and on the role that higher education and research organisations

could play as major contributors to the knowledge economy. National innovation policies have begun to shape and supersede traditional higher education and research policies.[1]

National innovation policies appear to take various forms. Dill and van Vught identified two broad categories of national innovation policy strategies.[2] The first and largest category comprises what could be called prioritisation strategies. These policies are characterised by features such as foresight analyses in the science and technology sectors, priority allocation and concentration of resources, and quality assessments of research outputs. They reflect the notion of national planning (see for example Australia's research priority setting initiatives, Finland's technology and innovation policy with a key role for TEKES, and the Dutch Innovation Platform policy). The other category of innovation policies places an emphasis on market forces and competition. The policy characteristics of these competition strategies include an emphasis on competitive allocation of resources, encouraging entrepreneurial university behaviour, deregulating the higher education sector, and encouraging multiple sources of funding. The pre-eminent example of this strategy is the US federal science policy with its emphasis on a national marketplace of competing private and state universities, limited federal control, and the competitive allocation of funding by research funding agencies. But aspects of this type of competition strategy can also be found — to a greater or lesser degree — in e.g. Canada, Germany, Japan and the United Kingdom.

II. **Increasing institutional autonomy**

Higher education institutions increasingly have been granted more autonomy by their national governments. In the older days, governments largely decided on what higher education institutions should do. There were often detailed regulations regarding which programmes higher education institutions could offer and how these should be structured, detailed financial regulations determined how governmental budgets were to be spent, and the

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[1] Marcus Balzat, *An Economic Analysis of Innovation: Extending the Concept of National Innovation Systems* (Cheltenham: Edward Elgar, 2006); Richard R Nelson, *National Innovation Systems: A Comparative Analysis* (Oxford: Oxford University Press, 1993); Organisation for Economic Co-operation and Development (OECD), *Main Science and Technology Indicators* (Paris: OECD, 2005).

[2] David D. Dill, and Frans A. van Vught, eds., *National Innovation and the Academic Research Enterprise: Public Policy in Global Perspective* (Baltimore: Johns Hopkins University Press, 2010).

infrastructure of the higher education institutions (buildings, estate) were often owned by the government.[3]

Programmatic freedom has increased in many countries. Nowadays, governments often use lump sum funding with significant discretion for institutions to decide how and where to allocate the budgets. Human resource management policies have been devolved to higher education institutions, sometimes going hand in hand with a change of status of academic personnel from civil servant to employee. And, many higher education institutions are now responsible for their real estate.

This may look like a rosy picture of increasingly more scope for institutional strategies and profiling, but it is fair to state that governments have sometimes been hesitant to grant institutional autonomy in all areas.[4] Moreover, governments have often exchanged *a priori* evaluation (through regulations) with *ex post* evaluations.[5] That said, comparing the current levels of institutional autonomy with the situation a few decades ago, there is arguably much more scope for strategic choice by higher education institutions.

However, it is clear that governments and other stakeholders want something back in return for this increased autonomy. The crucial roles higher institutions can play with respect to national innovation policies are turning them into an object of policy attention. External stakeholders (including potential new students and business & industry) ask for more transparency and accountability, and increasingly confront higher education institutions with questions about their relevance and effectiveness in terms of national innovation.

III. **Challenges for higher education institutions**

Obviously the changing context described above has major impacts on higher education institutions. We present some of these challenges under

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[3] See e.g. Leo Goedegebuure et al., eds., *Higher Education Policy. An International Comparative Perspective* (Oxford: Pergamon, 1994).

[4] Thomas Estermann, and Terhi Nokkala, *University Autonomy in Europe I* (Brussels: EUA, 2009); Åse Gornitzka, and Peter Maassen, "Hybrid Steering Approaches with Respect to European Higher Education." *Higher Education Policy* 13, no. 3 (2000): 267-68; Guy Neave, and Frans A. van Vught, eds., *Prometheus Bound. The Changing Relationship between Government and Higher Education in Western Europe* (Oxford: Pergamon, 1991).

[5] Guy Neave, "The Evaluative State Reconsidered," *European Journal of Education* 33, no. 3 (1998): 265-84; Guy Neave, *The Evaluative State, Institutional Autonomy and Re-Engineering Higher Education in Western Europe. The Prince and His Pleasure* (Basingstoke: Palgrave Macmillan, 2012).

three headings: mission overload, global research competition, and system diversity. The overarching theme of these challenges is the imperative for higher education institutions to rethink their role in the higher education landscape and to consider and develop what we will term 'institutional profiles'. Institutional profiles are to be understood as key characteristics of the mission, activities and performances of higher education institutions. Institutional profiles can be divided into 'activity profiles' and 'performance profiles'. Activity profiles describe what higher education institutions do, illustrating their activities. Performance profiles are about how good higher education institutions are in performing their activities.

1. *Mission overload*

Higher education institutions are increasingly facing rising expectations and an expanding set of challenges. They are expected to address the world's major problems — e.g. those related to our natural environment; the settlement and movement of people; pandemics; poverty; terrorism etc. Worldwide there is widespread expect ation that universities and other institutions should research an increasingly broad range of problems in an ever-growing holistic fashion and at an accelerated pace (see e.g. the European Commission's Horizon 2020 programme). As our societies become more knowledgeable, universities and research institutions come under increasing pressure to expand transfer of knowledge and apply new knowledge in order to solve the problems confronting the world.

In addition, these expectations are becoming increasingly diversified. Higher education institutions are expected to produce the knowledge and human capital that meet the needs of the modern knowledge society, play a central role in innovation processes, contribute to regional development, increase social inclusion and contribute to the resolution of global problems. Governments tend to translate these multiple expectations into roles and responsibilities, often backed by earmarked funding or with conditions attached to general budgets. Higher education institutions themselves tend to take on a wider set of activities, partly through political and social pressure and partly in response to market opportunities.

The result can be an accumulation of mission elements, leading to the risk of mission overload. Higher education institutions increasingly face the challenge to strategically consider their basic focus and portfolios.

2. *Global research competition*

On a worldwide scale, company labs are increasingly putting an end to their basic research activities. Companies are concentrating on short-term results, while adopting a strategic global approach to more basic research increasingly reliant on offshore partnerships, academic collaboration and outsourcing to established networks of scientific expertise.

National innovation policies, with their emphasis on the application of new knowledge, serve to encourage universities and other research organisations to participate in these new global research networks. There appears to be increasing competition between nations to make themselves attractive to footloose corporate R&D investments. In their innovation policies nations aim to prioritise and concentrate their own research expenditures to achieve competitive scale and quality. In addition, nations increasingly show a willingness to coordinate their own research investments with large international research budgets, like those of the European Union.

As a result, universities and research institutions are confronted with the challenge of selecting and investing in those research fields in which they can compete on a global scale. This often requires risky investments in research teams, major facilities and equipment. The current global research competition drives universities towards new forms of strategic management forcing them to make major strategic choices regarding their research portfolios and to marshal their resources effectively and efficiently.

3. *Higher education system diversity*

In the context of innovation, higher education institutions are not only stimulated to focus on relevant knowledge production. They are also urged to increase participation rates and particularly the supply of well-trained 'knowledge workers' in prioritised sectors in order to support the creation of effective human capital, needed for a successful implementation of the national innovation policy.

Globalisation and the focus on innovation in many countries appear to trigger diversification policies in higher education. The urge to diversify — both in terms of programmes offered and in terms of institutional profiles — appears to be a key knock-on effect of national innovation strategies in many higher education systems. The literature suggests two key factors assumed to have an impact on the level of diversity: governmental regulation

and market competition,[6] both affecting diversity in different ways. Governmental regulation (for instance the creation or maintenance of a binary system) is thought to limit the scope for higher education institutions to develop their own profiles and so can be expected to limit diversity. At the same time, regulation is sometimes deemed a 'necessary evil' to forestall academic drift (and consequently homogenisation). Market competition is thought to offer leeway for institutional profiling and therefore is assumed to lead to higher levels of diversity. But markets also lure organisations into mimicking successful players and hence also foster homogenisation.[7]

It has been suggested that the strategic positioning of individual higher education institutions, and particularly their ability to occupy favourable niche positions, may play an important role in terms of the overall level of diversity among higher education systems.[8] Both governments and higher education institutions themselves increasingly focus on the strategic development of a widening range of teaching and learning programmes and specific institutional educational portfolio's.

4. *Strategic challenges, the need for profiling*

Bringing the consequences together, the need for institutional profiling becomes evident. First, because of the increasing expectations and challenges, higher education institutions need to reassess and clarify their missions, goals and priorities, carefully defining their institutional profiles. In addition, the increasing global competitiveness strengthens the need for profiling. Strategic research management — including a deliberation with whom to compete AND with whom to collaborate — is therefore one of the most important aspects of modern higher education leadership. Modern research management implies a clear view of an institution's research strengths and weaknesses in a competitive

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[6] Jeroen Huisman, and Frans A. van Vught, "Diversity in European Higher Education: Historical Trends and Current Policies," in *Mapping the Higher Education Landscape. Towards a European Classification of Higher Education*, edited by Frans A. van Vught. 17-37 (Dordrecht: Kluwer, 2009); Lynn Meek, Leo C J Goedegebuure, and Jeroen Huisman, "Editorial: Diversity, Differentiation and the Market," *Higher Education Policy* 13, no. 1 (2000): 1-6.

[7] See also Jeroen Huisman, Lynn Meek, and Fiona Q. Wood, "Institutional Diversity in Higher Education: A Cross-National and Longitudinal Analysis," *Higher Education Quarterly* 61, no. 4 (2007): 563-77.

[8] Tatiana Fumasoli, and Jeroen Huisman, "Strategic Agency and System Diversity: Conceptualizing Institutional Positioning in Higher Education," *Minerva* 51, no. 2 (2013): 155-69; Frans A. van Vught, "Mission Diversity and Reputation in Higher Education," *Higher Education Policy* 21, no. 1 (2008): 151-74.

global research market and the courage to select and develop a set of research field priorities as a major defining part of the institutional profile. Finally, the need for profiling furthermore stems from governments' imperatives regarding their national higher education systems. Governments often seek an increasing diversity of the overall sets of higher education programmes and urge higher education institutions to contribute to this diversification.

All these factors force higher education institutions to carefully consider their strategic choices regarding their activities and performances. In other words, they are incentives for higher education institutions to sharpen their institutional profiles and to develop them as key strategic tools in positioning their institution in both their national higher education system and international context.

IV. **Institutional profiles and strategic choice: a theoretical base**

Institutional profiles display what the institution does, how good it is at it and how it compares to other institutions. As was suggested earlier, institutional profiles can be divided into activity profiles and performance profiles. Activity profiles describe the actual activities of an institution in terms of focus, volume, priorities, etc. Activity profiles are descriptive and map the set of activities that defines the various tasks that an institution sets for itself. Performance profiles are evaluative, they show how well an institution performs these tasks, and hence imply a judgement in terms of the output and impact of an institution's activities.

Generally speaking, an institution's profile reflects the dimensions of its mission. These can be the well-known basic dimensions of teaching & learning, research and knowledge exchange or transfer. But an institution may wish to emphasise other dimensions as equally important aspects of its mission, such as international orientation or regional engagement.

By providing information about the activities and/or performance of a higher education institution in terms of the dimensions of its mission, institutional profiles serve as transparency instruments allowing both internal and external actors (including students, funders, governments) to get to know the institution and to assess it as a potential fit with their needs and priorities.

In order to learn how to grasp the topic of institutional profiles we turn — building on earlier work[9] — to the corporate sector literature. Not surprisingly, there are different perspectives on organisational profiling in

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[9] Fumasoli and Huisman, "Strategic Agency and System Diversity".

that corporate sector literature, but for our purpose, a distinction between inside-out and outside-in perspectives is deemed relevant.

Outside-in perspectives argue that environmental factors determine to a large extent the scope for organisational action. The population ecology approach would be an extreme version of this, arguing that environments select organisations and individual organisations do not have or limited strategic intent.[10] Insofar as organisations have strategic intent, this is largely overshadowed by the powers of environmental forces determining populations` growth rates and organisations` survival rates. Also new institutional theory stresses the role of the environment: the environment 'forces' organisations to comply with institutional norms and values.[11] A similar emphasis on environments (markets) can be found in Porter's work.[12] He urges businesses to focus on competition, achieving strong market positions and creating a competitive advantage. The market position is key in the outside-in approach and 'only' then resources are considered.

At the other end of the spectrum, we see perspectives that stress much more the role of internal capabilities, competencies and resources. The resource-based view, for instance, argues that the business strength should be taken as a point of departure.[13] Businesses should focus on developing difficult-to-imitate products or services and subsequently suitable markets should be found.

For other perspectives it is sometimes difficult to locate these on the inside-out versus outside-in dimension. Some scholars take an intermediate stance in the debate and argue that both the environment and internal capabilities need to be taken into account. For instance, the resource dependency approaches would stress the overwhelming importance of resources in the environment that need to be acquired to survive.[14] But at the same time, it argues that the internal perceptions, deliberations, negotiations and coalition formation play an important role. These internal forces are not explicitly labelled as capabilities or competencies by Pfeffer and Salancik

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[10] Michael Hannan, and John Freeman, "The Population Ecology of Organizations," *American Journal of Sociology* 82, no. 5 (1977): 929-64.

[11] Paul J. DiMaggio, and Walter W. Powell, "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields," *American Sociological Review* 48 (1983): 147-60.

[12] Michael E. Porter, *Competitive Advantage: Creating and Sustaining Superior Performance* (New York: Free Press, 1985).

[13] Jay B. Barney, "Firm Resources and Competitive Sustained Advantage," *Journal of Management* 17, no. 1 (1991): 99-120.

[14] Jeffrey Pfeffer, and Gerald R. Salancik, *The External Control of Organizations. A Resource Dependence Perspective* (New York: Harper & Row, 1978).

(1978) but can be seen as such if one were to compare their perspective with e.g. the resource-based view. Likewise, relatively recent developments in institutional theory argue for more attention to the role of agency in institutional change.[15] These authors argue that powerful agents in organisational fields can affect the environment and institutional rules and, consequently, create space for other types of organisations that are able to acquire significant levels of legitimacy. In other words, although environments put pressure on organisations to conform to institutional rules, there is also scope for entrepreneurial and strategic action to deviate from existing rules.

The jury is still out whether inside-out and outside-in perspectives can or should be combined.[16] For the purpose of this paper, we think it is sound to posit the following, quoting Fumasoli and Huisman:

> … higher education institutions respond to demands, opportunities and threats offered by the environment by displaying different degrees of agency: from reacting and adapting, to intervening dynamically to modify the context in which they are embedded. Organisational positioning is the result of both organisational action and environmental determination. Positioning is partly avoiding competition by carving out a sustainable niche in which it offers a mix of services, and partly competing on selected activities in different markets (for students, for staff, for funds) with a subset of institutions in the higher education system.[17]

Now that we have explored the potential theoretical foundations of institutional profiles, let us turn to the question how these institutional profiles can be developed in practice. In the next section, four different tools are offered.

V. **Institutional profiles: operational tools**

In this section we discuss a set of practical and operational instruments that allow both internal and external higher education stakeholders to present and analyse institutional profiles.

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[15] Royston Greenwood, and Roy Suddaby, "Institutional Entrepreneurship in Mature Fields: The Big Five Accounting Firms," *Academy of Management Journal* 49, no. 1 (2006): 27-48; Pursey Heugens and Michel Lander, "Structure! Agency! (and Other Quarrels): A Meta-Analysis of Institutional Theories of Organization," *Academy of Management Journal* 52, no. 1 (2009): 61-85; Steve Maguire, Cynthia Hardy, and Thomas Lawrence, "Institutional Entrepreneurship in Emerging Fields: Hiv/Aids Treatment Advocacy in Canada," *Academy of Management Journal* 47, no. 5 (2004): 657-79.

[16] See e.g. Bob de Wit, and Ron Meyer, *Strategy: Process, Content, Context. An International Perspective* 4th ed. (Andover: Cengage Learning EMEA, 2010), chapter 5, for a very good overview of the debate.

[17] Fumasoli and Huisman, *Strategic Agency and System Diversity*.

1. *Mapping*

'Mapping' is an interesting way to present institutional *activity* profiles. When a profile is 'mapped', the focus is on describing its various activities. Rather than taking a specific ideal type as the base for comparing a variety of profiles (as is the case in a number of current rankings), a mapping exercise begins by making the range of profiles visible and transparent and only focuses at comparing institutions with similar (or largely similar) profiles. In addition, instead of comparing all possible profiles, this approach compares apples with apples and oranges with oranges. It aims to portray the specific activity profiles of comparable individual institutions in a number of profile dimensions.

The European U-Map tool has been developed to allow the creation and analysis of these activity profiles, offering snapshots of an institution's activities on different dimensions.[18] U-Map can be accessed online and offers two tools (the Profile Finder and the Profile Viewer) that allow stakeholders to analyse institutional profiles and carry out specific comparative studies (benchmarking). The six dimensions of U-Map are: teaching & learning; student profile; research involvement; regional engagement; involvement in knowledge exchange; and international orientation. For each dimension, sets of indicators have been developed, with institutional profiles comprising the scores on all or a certain number of the dimensions. A profile reflects those areas where an institution is active and indicates the intensity of activities per dimension.

Of course it is up to the higher education institutions to choose their own profiles but once this is done, a mapping exercise allows for effective and useful benchmarking processes (see below). In addition, a university that knows its activity profile well and knows which counterpart institutions have similar profiles is able to identify to external stakeholders the role and position it occupies within its higher education system and how it wants to be held accountable.

2. *Multidimensional ranking*

Multidimensional ranking is a transparency tools that allows the presentation and analysis of institutional *performance* profiles. Multidimensional ranking is very different from the well-known and highly visible

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[18] Frans A. van Vught, ed., *Mapping the Higher Education Landscape: Towards a European Classification of Higher Education* (Dordrecht: Kluwer, 2009).

global university rankings.[19] Multidimensional ranking implies an approach to comparing institutional performance profiles based on a number of crucial so-called 'design principles'. Starting from the fundamental epistemological point of view that 'objective rankings' cannot be developed, multidimensional ranking is user-driven (users construct their own rankings based on their selection of dimensions and indicators), multidimensional (reflecting a multiplicity of functions of higher education institutions), focused on comparable institutions only (comparing profiles that are sufficiently similar), multi-level (comparing performance at an institutional and at a 'field' level) and methodologically sound (avoiding composite indicators, and taking into account disciplinary, language and cultural differences).

The U-Multirank tool),[20] which is based on these design principles, enables its users to identify comparable institutions and programmes, to create both institutional and field level performance profiles of individual institutions, and to undertake comparative performance analyses of institutions and programmes. U-Multirank consists of five performance dimensions (teaching and learning, research, knowledge transfer, international orientation, regional engagement) and a range of indicators for each dimension from which the users can choose.

U-Multirank provides its users with an on-line functionality to create two general types of rankings:

— focused institutional rankings: rankings on the indicators of a (selection of) the five performance dimensions at the level of an institution as a whole.
— field-based rankings: rankings on the indicators of a (selection of) performance dimensions in a specific (disciplinary) field.

3. *Benchmarking*

Benchmarking can be seen as a 'logical' follow-up to mapping and multidimensional ranking, but benchmarking can take place independently from the phase of an extensive search for comparable partners. Burquel and van Vught present benchmarking as an exercise going beyond current quality approaches and define it as "… the process of self-evaluation and

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[19] For a comprehensive overview of the criticism of current rankings, see Frans A. van Vught, and Frank Ziegele, eds., *Multidimensional Ranking. The Design and Development of U-Multirank*. (Dordrecht: Springer, 2012.)

[20] van Vught and Ziegele, *Multidimensional Ranking*.

self-improvement through the systematic and collaborative comparison of practice and performance with similar organisations in order to identify strengths and weaknesses, to learn how to adapt and improve organisational processes".[21] The basic idea is that benchmarking is a self-analysis and quality-enhancing tool. Through a systematic comparison of central institutional processes with other higher education institutions, an organisation will gain insight in potential improvements of its performance. A crucial difference with other quality instruments is that the organisations involved in the benchmarking process set the performance targets themselves, i.e. they are not forced up by external quality assurance agencies. This arguably leads to a stronger sense of commitment and engagement with the improvement process. Furthermore, it has other added value for it will likely lead to strategic decision-making based on systematic gathering of relevant data.[22]

Van Vught and others — on the basis of a project funded by the European Commission — report on experiences with benchmarking processes.[23] They argue that the following format may be helpful as a generic template for benchmarking. That format consists of four steps. The first one entails defining priorities, targets, criteria, indicators and benchmarks for all institutions involved in the process. The second step involves gathering the relevant data to 'score' each of the institutions on all benchmark indicators. Third, an in-depth analysis should take place of the processes behind the scores followed by developing relevant action plans for improvement. The last stage relates to the implementation of the action plan and concluding the benchmarking cycle. Obviously, the benchmarking cycle can — for those institutions that think this is relevant and worthwhile — be repeated. Alternatively, an institution performing at satisfactory levels can decide to focus on other facets of its functioning.

In benchmarking processes, (elements of) institutional activity profiles or institutional performance profiles can form an effective starting point. Using a 'mapping' tool, which will produce activity profiles, or a multidimensional ranking tool, which will offer performance profiles, allows actors involved in a benchmarking process to compare activities and/or performances of a set of higher education institutions. Based on jointly

[21] Nadine Burquel, and Frans van Vught, "Benchmarking in European Higher Education: A Step Beyond Current Quality Models," *Tertiary Education and Management* 16, no. 3 (2010): 249.

[22] Ibid., 244.

[23] Frans A. van Vught et al., *A University Benchmarking Handbook. Benchmarking in European Higher Education* (Brussels: ESMU, 2010).

undertaken comparative analyses, a focused quality improvement process can then be designed and implemented.

4. *Degree profiles*

A particularly relevant approach for teaching and learning is to be found in the idea of degree profiles, developed in the context of the Tuning project. Degree profiles can be conceived of as a potentially fruitful elaboration of the 'teaching and learning' dimension of the mapping and multidimensional tools mentioned before. In both U-Map and U-Multirank this dimension is being distinguished and operationalised by offering sets of indicators. Degree profiles capture the 'essence' of specific study programmes and hence they offer the possibility to link these to the indicators to be applied in the other transparency tools.

Lokhoff et al. suggest that degree profiles should be designed to summarise the essential information about a specific study programme. It "locates the programme in the academic map of disciplines and thematic studies".[24] The profile specifies subject areas and the competences and learning outcomes that graduates will have achieved upon completion of the degree. It does not only function as a tool of transparency — allowing for international comparisons of degree contents — but also allows for differentiation. Higher education institutions can include specialisations, strong points, etc. in their degree profiles, which could be an add-on to the general institutional profile.

Degree profiles are powerful reference points for various stakeholders. Students and instructors can use them to discuss, analyse and administer learning programmes, courses, assignments and assessments. Institutions can make use of them in curriculum development and degree planning. Quality assurance agencies and accrediting organisations can apply them when addressing the quality of programmes and institutions.

In terms of institutional profiling, degree profiles offer a base for higher education institutions on which they can build and present their own teaching and learning activities and performances. As such they can be part of the broader profiling tools such as U-Map and U-Multirank and assist higher education institutions to focus on transparency and quality in their educational functions.

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[24] Jenneke Lokhoff et al., eds., *A Tuning Guide to Formulating Degree Programme Profiles. Including Programme Competences and Programme Learning Outcomes* (Bilbao: Universidad de Deusto, 2010): 15.

VI. **Conclusions**

The analysis presented above makes clear that higher education institutions can and must make strategic choices. For higher education institutions it is of utmost importance to carefully think through which position they want to take in the national and global higher education landscapes and to consider whether these positions are sustainable. Finding, analysing and communicating their profiles has become a major strategic challenge for any higher education institution.

Theoretically both the outside-in perspectives (focusing on the challenges that arise from global and national markets) and inside-out perspectives (focusing on strengths, competencies and capabilities) will be helpful to guide higher education institutions in these processes. In operational terms we have offered a set of tools that can assist higher education institutions to present, compare and analyse their profiles.

If higher education institutions are able to position themselves and develop sound and robust profiles, governments will be better able to answer questions like: do we have the best set of institutional profiles in the context of the global competition for talent and knowledge? Do we have the best range of profiles in order to further develop our knowledge economy? Do we have the best possible spread and critical mass of research units and infrastructures? In addition, by studying these profiles other stakeholders will be able to be better informed about the various ways different higher education institutions respond to their needs and interests. Finally for higher education institutions themselves institutional profiles offer fruitful and effective ways to better understand, analyse and position themselves in the rapidly changing contexts they are confronted with.

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Building Degree Profiles. The Tuning Approach

Julia González and Maria Yarosh

Abstract: The development of degree profiles is an important art which has become quite specialized in recent years. This article concentrates on the analysis of the importance of the role of degree profiles in the design of degrees and, as a consequence, in Higher Education in general. It analyses, particularly, the work of the Tuning Project and its main processes in relation to profile building. It also gathers together and systematizes the specific contribution of four main components which should be taken into consideration at the time of the creation of new qualifications: two of the components relate to the analysis of social and professional needs and the future trends in the area. Both of these elements provide the relevance which a degree profile should strive to attain. The third component, the reference to the meta-profile, provides a capacity for recognition throughout an entire region and also in relation to the global context. The last element in profile development takes into consideration the university where the programme is anchored, its mission and strengths.

Keywords: Degree; degree profile; reference points and meta-profiles; recognition; relevance; quality; social needs; levels; competences and learning outcomes; educational programme.

I. Introduction and context

The recent publication *Communities of Learning: Networks and the Shaping of Intellectual Identity in Europe, 1100-1500*[1] explores the fundamental insight that all new ideas are developed in the context of a community, whether academic, religious, or simply as a network of friends. This article arises from the context of an experience of more than 30 years of deep commitment to Higher Education (HE hereafter) of international academic communities (first at European and then at global level) engaged in student mobility, credit development, building international curricula as well as responding to the specific needs of projects in Thematic Networks. These were real Communities of Learning amongst whom ideas about HE developed and flourished. The article owes a lot to the questions shared with hundreds of academics who have been searching and exploring new ways of carrying

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[1] John N. Crossley and Constant J. Mews, eds., *Communities of Learning: Networks and the shaping of intellectual identity in Europe, 1100-1500* (Turnhout: Brepols Publishers, 2011).

out the unending task of opening the minds of younger generations not only to know and understand reality but also to imagine it differently, to judge the level of accuracy and the implications of their innovative perspectives and to search for ways of realizing them. This paper is heavily in debt to the international groups of colleagues who have shared the work of trying to design and deliver many international joint degrees, research and educational projects, and above all to the group of people who contributed to the systematization of processes and the development of concepts in the Tuning Project which seem to serve and be able to bridge continents achieving the acceptance of the international academic community. The Tuning Project, a Network of Communities of Learning, has been shaping the intellectual identity of HE for over ten years now, not only in Europe but in Latin America, USA, Russia, Africa... and other regions of the world.[2]

II. **Degrees in the age of convergence and diversity**

The speed at which changes in HE have occurred in the last two decades should not blur for us the time span that it has taken to arrive at the contemporary multi-task university with high levels of sophistication in degree design and delivery.[3] The process has been very long, starting with a basic structure that remained the fundamental model. This evolved through time and become diversified in terms of subjects taught, the organisation of studies and the methods of teaching and examining, especially within national contexts. The structure of studies, however, remained quite fixed. Evolution in the last twenty years has been very rapid and was linked with international co-operation.

It was not until the Sorbonne and the Bologna Declarations[4] that degrees would become the essential focal point of the European Higher Education

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[2] More particularly, the authors would like to thank the leaders of Subject Area groups whose meta-profiles are cited as examples: Gustavo Pedrazo Aboytez, Irina Petrova, and Alex Rayón Jerez, Haddis Teklemariam and Karola Hahn for their meta-profiles; and Carlos Vargas Tamez for his contribution to the topic of relevance in Higher Education.

[3] Cf. Olaf Pedersen, The First Universities - Studium Generale and the Origins of University Education in Europe (Cambridge: Cambridge University Press, 1997) and Clara Tamayo Serrano, "El aporte cultural y educativo de la Baja Edad Media," *Educación y Educadores* 10, no. 2 (2007): 197-213.

[4] Sorbonne Joint Declaration: Joint declaration on harmonisation of the architecture of the European higher education system, (1998, May 25), http://www.bologna-berlin2003.de/pdf/ Sorbonne_declaration.pdf and The Bologna Declaration of 19 June 1999: Joint declaration of the European Ministers of Education (1999, June 19), http://www.bologna-berlin2003.de/pdf/ bologna_declaration.pdf

Area and the need to reflect on the definition(s) and constitutive elements of the degrees was identified. It is at this time that an ever increasing number of countries have agreed to strive for a common definition of degrees, a common understanding of their constitutive elements and a common language to go beyond mere words and titles to the comprehension of the processes of learning that these are meant to provide. The centrality of degrees for the Bologna process is well recognised, however, the degree of success of the process is sometimes in question.

Studies on the level of achievement of the Bologna Reforms show the significance of the impact.[5] However, as Barbara Kehm observes, while there is a considerable degree of convergence at the macro-level — in cases such as the system-wide introduction of a tripartite tiered structure of degrees or the use of the European credit — there is still considerable heterogeneity at the meso- (higher education institutions) and micro-levels (study programmes).[6] She also considers that some elements of the Bologna reform agenda such as modularisation, learning outcomes and their assessment are not well understood in many systems and thus create a further element of divergence. This is in agreement with Veiga[7] who observes that while at the macro level there is a clear element of increasing convergence, the main difficulty lies at the level of the individual countries. The latter argues that the change has taken place at the institutional and departmental level with curriculum reforms affecting professional roles and academic disciplines. The impact of the national factor is also recognized by Sin[8] who, after the analysis of three countries through a qualitative approach using cultural interpretation theory points out that the prevalent perceptions of the Bologna reforms are decoded differently by academics in these three countries; showing that National cultural factors continue to play an important role in the context of decisions

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[5] CHEPS, INCHER & ECOTEC, *The Bologna Process independent assessment: The first decade of working on the European Higher Education Area*, Vol. 1 (2010), http://ec.europa.eu/education/higher-education/doc/bologna_process/independent_assessment_1_detailed_rept.pdf and CHEPS, INCHER & ECOTEC, *The Bologna Process independent assessment: The first decade of working on the European Higher Education Area*, Vol. 2 (2010), http://ec.europa.eu/education/higher-education/doc/bologna_process/independent_assessment_2_cases_appendices.pdf

[6] Barbara M. Kehm, "Editorial," *European Journal of Education. Special Issue: The Bologna Process revisited* 47, no. 3 (2012): 343-347, doi: 10.1111/j.1465-3435.2012.01529.x

[7] Amélia Veiga, "Bologna 2010. The moment of truth?" *European Journal of Education. Special Issue: The Bologna Process revisited* 47, no. 3 (2012): 378-391, doi: 10.1111/j.1465-3435.2012.01532.x

[8] Cristina Sin, "Academic understandings of and responses to Bologna: a three-country perspective," *European Journal of Education. Special Issue: The Bologna Process revisited* 47, no. 3 (2012): 392-404, doi: 10.1111/j.1465-3435.2012.01533.x

taken at Joint Ministerial level. However, due to the fact that the process initiated by the Bologna Declaration was and is a joint, collaborative experience, the evaluation of the success becomes as tentative and un-dogmatic as processes can be. It also becomes attractive and appealing to other regions[9] who want to join in the collective search and learning and perhaps this speaks for its success and impact.[10]

1. *Defining degrees and their components*

Given the paramount importance of degrees and as an introduction to their profiles, it is worthwhile to analyse: first the definition of degrees and second the elements which constitute them. Five bodies and associations have been engaged in the definition of degrees and in the consideration of their components:

1. The Ministerial groups in meetings and declarations in which degrees had a significant level of centrality;
2. The group related to the Joint Quality Initiative later becoming the European Qualifications Framework;
3. The European University Association;
4. The Council of Europe-Higher Education; and
5. The Tuning Project.

The definition of Degrees from the Ministerial Group, with possibly the highest impact, due to its level of decision and also concreteness, comes from the Berlin Communiqué: "Ministers encourage the member States to elaborate a framework of comparable and compatible qualifications for their higher education systems, which should seek to describe qualifications in terms of workload, level, learning outcomes, competences and profile".[11]

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[9] It must be noted that the word "region" is used throughout the present article to refer to those areas of the world who, far from being homogeneous or constitute one inseparable whole, choose to join their efforts and work together on (re) designing HE programmes to enhance HE quality and, in this way, make a first or a next step towards creating a common area of HE.

[10] Clifford Adelman, *The Bologna Process for U.S. eyes: re-learning higher education in the age of convergence* (Washington, DC, 2009), http://www.ihep.org/assets/files/EYESFINAL.pdf, and Jane Knight, "A conceptual framework for the regionalization of higher education in Asia: application to Asia," in *Higher education regionalization in Asia Pacific: Implications for governance, citizenship and university transformation*, ed. John N. Hawking, Ka Ho Mok, and Deane E. Neubauer (London/New York: Plagrave Macmillan, 2012), 17-36.

[11] The Berlin Communiqué: Realising the European Higher Education Area (2003), http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/MDC/Berlin_

A definition of degrees was produced by the collective effort of a group made up mainly of Quality Agencies and Ministerial experts, which brought about A Framework of Qualifications of the European Higher Education Area: "Any degree, diploma or other certificate issued by the competent authority attesting that particular learning outcomes have been achieved, normally following the successful completion of a recognized higher education programme of study".[12] This group also developed the Dublin Descriptors and contributed significantly with the concept of degree level, concentrating on the primary importance of the learning outcomes as the dominant characteristic of new degrees.

The European University Association offers a unique quantitative perspective through its Trends Studies, in which it considers that a large majority of institutions have implemented the new Bologna degree structure: from 53% of institutions in 2003 to 95% in 2010.[13] However, in terms of degrees analysis, EUA mainly concentrates on the study of Master and Doctoral Degrees, particularly joint degrees as can be seen by analysing the publications of the European University Association in their web.

In relation to the Council of Europe, the contribution of Sjur Bergan[14] needs to be highlighted. He comments on the existing state of affairs in *Qualifications - Introduction to a concept* and arrives at the synthesis of the elements which constitute a degree. These main elements he identifies as: Level, workload, quality, profile, and learning outcomes and competences, both generic and subject-specific competences. He also considers that degrees are a key element of higher education policies in general and of the Bologna Process in particular with the consequence that a proper understanding of qualifications is essential to making the European Higher Education Area a reality.

Given that the fifth body — the Tuning community is the focus of the present paper, this is discussed in a separate section although in terms of time, the systematic works of the academics starts early in 2001.

Communique1.pdf

[12] Bologna Working Group on Qualifications Frameworks, *A Framework for Qualifications of the European Higher Education Area,* Copenhagen: Ministry of Science, Technology and Innovation, 2005, http://www.bologna-bergen2005.no/Docs/00-Main_doc/050218_QF_EHEA.pdf

[13] Andrée Sursock, and Hanne Smidt, *Trends 2010: A decade of change in European Higher Education* (European University Association: Brussels, 2010), http://www.eua.be/publications/eua-reports-and-studies.aspx

[14] Sjur Bergan, *Qualifications — Introduction to a concept* (Strasbourg: Council of Europe Publishing, 2007).

2. *Tuning definition and analysis of the degree components in a context of diversity*

In order to be consistent with the Tuning philosophy, diversity should be dealt with from the start. It was a clear concern in the Declarations of Sorbonne and Bologna and in the follow up Communiqués and it is absolutely vital to Tuning. The whole setting of the Tuning exercise is in an intercultural, international, inter-traditional-cultures context and the dialogue is an intercultural dialogue from beginning to end. The reaffirmation of diversity is an intrinsic motor in the development of the project and a constant concern in all its processes. The tension between the identification of the common and the richness of the diverse runs in each of the documents of the Tuning Project which now come from different parts of the world. In the first report in 2003, it is explained that: "The protection of the rich diversity of European education has been paramount in the Tuning Project from the very start".[15] This reaffirmation will be found again and realized in thirty one new documents, some recently published, others due to be published in 2013 related to the new studies in Latin America, Russia and Africa.

The very first definition of the Bologna Degrees as such came from the Tuning Project. From the year 2001, the members of the Tuning Project worked on a definition that was laid out in the Glossary in 2003: "Qualification awarded by a higher education institution after successful completion of a prescribed programme of study. In a credit accumulation system, the programme is completed through the accumulation of a specified number of credits awarded for the achievement of a specific set of learning outcomes".[16] In this *Formative Phase of Tuning (2001-2005)* the analysis of degrees took place under five different lines of investigation: (1) Generic competences; (2) Subject specific competences; (3) European credits; (4) Approaches to Teaching, Learning and Assessment; and (5) Programme quality. These lines gave birth to the first definition of Tuning degree[17] components as: profile; learning outcomes and competences (generic and subject specific); level; workload; approaches to teaching/ learning and assessment; and programme quality.

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[15] Julia González, and Robert Wagenaar, eds., *Tuning educational structures in Europe: Final Report. Phase One* (Bilbao: University of Deusto and University of Groningen, 2003), 22.

[16] González and Wagenaar, *Tuning educational structures in Europe: Final Report. Phase One*, 257.

[17] Be it a newly-created degree or a long-existing degree revised and re-structured in order to better match the current needs.

Relating to the work of Tuning during this *first stage*, the identification of the components and the structuring of degrees constituted the main collective finding and set the scene for later developments. The articulation of the whole system slowly became a reality as the profile was expressed at a particular degree level in terms of learning outcomes and competences. These competences were then jointly defined and discussed in consultation with social partners, both in terms of importance and in terms of university performance. This empirical exercise provided a concrete setting, in which to reflect, discuss and welcome the diversity. The articulation of degrees in terms of credits (present in the definition of the glossary) revealed that the dimension of the time required to achieve the learning outcomes is an integral part of the whole concept of the degree. In addition, it was very important to consider the relevance and appropriateness of different methodologies of teaching, of learning and of assessing the desired learning outcomes. The final element: programme quality was the last element to be identified as of critical importance for ensuring the consistency of the whole system and the accountability required.

The image of the jigsaw puzzle where the different pieces fitted together (Figure 1 below) accompanied the *second phase* of Tuning (2006-2009), the *phase of consolidation and expansion*.

1. Define competences
2. Select and agree
3. Consult groups
4. Analyse results
5. Design profiles
6. Reflect workload
7. Formulate learning strategy
8. Indicate assessment
9. Check quality
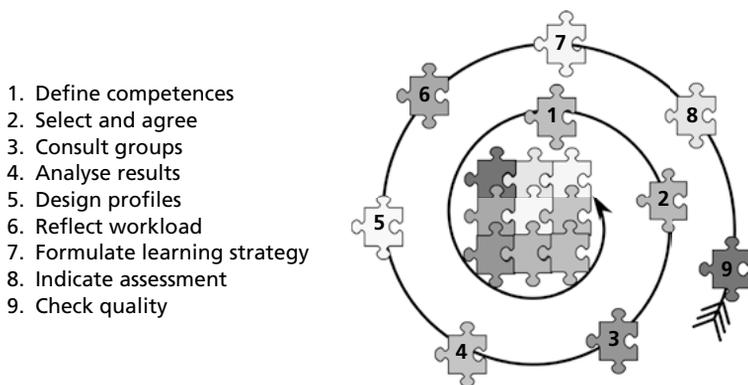
Figure 1

Bringing degree development elements together.

A further essential identity mark inherited during this period related to the Reference Points. The Reference points, or the set of competences and learning outcomes which the Tuning Communities of Learning considered as

essential for the identification of degrees in different fields of study gained popularity, validity, depth and recognition by academic communities all over the world. The development of further reference points both at the level of new disciplines as well as in relation to new areas brought further elements for reflection.

The Latin American experience revealed the importance of academic credits for a quality development of degree profiles.[18] While in Europe, credits were introduced primarily as a tool for promoting mobility, in Latin America the experience proved that a quality degree could not be designed without an internal understanding of the units of learning and their temporal demands.[19] At the same time the three forces which had been at the root of the Tuning concept of degrees from the beginning, became stronger. Tuning Degrees could be identified with the search for *relevance, recognition and quality*. This awareness of the fundamental forces driving the process brought further insights and direction.

These experiences, debates and further analysis brought the Tuning Project to the third period (2010-2013) which could be referred to as the *specialization phase*. In fact, the different components of the Tuning analysis of degrees can be understood from a more wholesale approach. There are three specific clusters of processes in relation to the development of degrees. The first cluster relates to the development of degree profiles, the second relates to academic programmes and the third deals with the personalised path for each of the learners. Each of these processes has two components: one of design and the other of implementation.

While the rest of this article will concentrate on the set of processes relating to the designing of degree profiles, it is important to emphasize that the other two clusters of processes are of great significance. Updated, socially and professionally required profiles could be built satisfactorily but these would be misleading if they were unsuccessfully transformed into programmes to guarantee their implementation or if they were inadequate for the real-life students who, in practice, tried to follow them.

An educational programme transfers the profile into the curriculum. The programme needs to be designed to assure consistency between the profile promised and the learning processes at work, between the set of competences and the ways to develop and acquire them. To design an academic programme is an exercise in consistency. This consistency needs to touch every element:

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[18] See *CLAR: Latin American reference credit* (Bilbao: University of Deusto, 2013).

[19] This article, however, is not going to discuss this crucial element in any more detail. Other sections deal at length with this issue, particularly on the section on credits in reference with the developments in Latin America.

the learning strategies involving the specific elements of theoretical and practical learning, the international paths involved, the planned experiences and the levels at which the competences need to be developed as well as the number of academic credits devoted to each educational component of the programme.

The last cluster relates to the path of the individual learner. In a student-centred learning system, each learner needs to follow a personal road that takes him/her through a particular programme. Relevant to this context is the evaluation of how the student initiates the process, his/her starting point, the recognition of prior learning achieved, as these elements are important to the understanding of individual strengths and weaknesses and very specially the personal motivations and aims which can be the engines bringing the process to a successful completion. A further crucial consideration is the awareness of specific styles of learning. This is particularly important in an age where ICT and images invade the mind and may give special importance and necessity to capacities such as abstract thinking.

During recent years in the Tuning process, the tasks of developing degrees have become quite diverse and demanding. Looking at the division of labour in universities, it may be considered as a specialisation issue. Since, there are some who prepare the profiles (profile designers),[20] others who specialise in the articulation of the different elements of the programme to implement the profiles (programme developers). Still others are in charge of accompanying and stimulating the learning process (the teachers) or of following the personal road of each of the people's learning paths (the tutors).

The rest of this article will concentrate on the development of the first cluster — degree profiles — and the work of those who are responsible for developing them.

III. **Building degree profiles**

The definition of degree profiles has advanced significantly through reflection during the latest period of the Tuning project. It appeared first as a rather tentative definition in *A framework for Qualifications of the European Higher Education Area*: "either the specific (subject) field(s) of learning of a qualification or to the broader aggregation of clusters of qualifications or programmes from different fields that share a common emphasis or purpose

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[20] The importance of training needs to be emphasised at this point and for every one of the tasks related to profile and programme design and delivery. Training or lack of it may make the entire curriculum reform miss the target or turn it into a success.

(e.g. an applied vocational as opposed to more theoretical academic studies".[21] The text points out, then, to the work of the Tuning Project as a reference for profile building. In fact, reshaping slightly the definition given in *A Guide to Formulating Degree Programme Profiles*[22] it may be concluded that a Degree profile describes the specific characteristics of a qualification in terms of learning outcomes and competences.

Another definition is offered by the *Degree Qualifications Profile*. This interesting combination for the American context supported by the Lumina Foundation and where Degree profiles encompass the qualifications framework, which are two different concepts in the European setting, defines it as "A Degree Profile — or qualifications framework — illustrates clearly what students should be expected to know and be able to do once they earn their degrees — at any level. This Degree Profile thus proposes specific learning outcomes that benchmark the associate bachelor's and master's degrees.[23]

However, the latest definition of a degree profile for Tuning was given on the 21st of November 2012, after a long process of reflection and debate within the standing projects of Tuning in Latin America, Russia and Africa, and describes the degree profile as a combination of forces around four poles:

1. The needs of the subject area (from the local to the more international context)
2. The meta-profile[24] of a specific field, the structured points of reference
3. The consideration of future trends in the profession and society
4. The specific mission of the institution.

Next, reference will be made of each of the elements and their impact in Degree Profiling.

1. *Analysis of social needs and professional demands*

The issue of *relevance* is paramount for the design of degree profiles. Without a doubt, the analysis of the relationship between university and

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[21] Bologna Working Group on Qualifications Frameworks, *A Framework for Qualifications of the European Higher Education Area*, 30.

[22] Jenneke Lokhoff et al., *A Tuning guide to formulating degree programme profiles* (Bilbao, Groningen, The Hague: University of Deusto, 2010).

[23] Lumina Foundation, *The degree qualification profile*. (2011), 1, http://www.luminafoundation.org/publications/The_Degree_Qualifications_Profile.pdf

[24] A meta-profile is a representation of the structure and combination of competences which gives identity to a subject area, the whole concept will be later developed.

society is at the core of the theme of relevance in higher education. Nevertheless, examining these relations should be conducted carefully. Tünnermann and de Souza warn that when the relevance of higher education is addressed, there is a tendency to reduce the concept to that of the appropriate response to the demands of the economy or the business sector. They assert that higher education should indeed meet these demands, but that relevance transcends economic and labour concerns. They argue that the society-university tandem should be examined in a broader perspective taking account of the challenges and demands presented to it by society as a whole. What is involved is translating the overall aims and purposes of society in terms of the tasks incumbent upon higher education, in both its quantitative and its qualitative aspects.[25]

Given the multiplicity of stakeholders and the differentiated expectations that they place on higher education, striking a balance between employability, citizenship, and personal growth, becomes a challenge. In an attempt to address such a challenge, Tuning has developed, from the start, a particular methodology to build and re-develop degree programmes that respond to these multiple aspirations. This exercise requires a better articulation between universities, and the problems as well as society and the world of work, basing long-term orientations on societal aims and needs, including respect for cultures and environmental protection. One more concern is the identification of the right mix of skills and their translation to curricula so that higher education graduates may be able to face current — and prospective — needs, to satisfy employment and social demands, and to contribute to the betterment of their societies and closer environments.

In addition to these broad social aspirations, there are other academic and labour imperatives that need to be met, namely the needs of the knowledge society. The OECD, for example, stresses the role of tertiary education in fostering research, innovation and development, and suggests the development of educational policies articulating clearly the nation's expectations of the tertiary education system and aligning priorities of individual institutions with the nation's economic and social goals.[26]

Tuning aims at identifying and addressing the needs of the productive sector, of the economy, of society as a whole, and the needs of individual learners within a particular area of study and mediated by their specific social

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[25] Carlos Tünnermann Bernheim, and Marilena de Souza Chaui, *Challenges of the university in the knowledge society, five years after the World Conference on Higher Education*, UNESCO Forum Occasional Papers Series, Paris: UNESCO, 2003, 11.

[26] OECD, *Tertiary Education for the Knowledge Society* (Paris: OECD Publishing, 2008).

and cultural contexts. In order to strike a balance between these varied needs, goals and aspirations, Tuning has undertaken consultations with leading persons, key local thinkers and experts from industry, academia, and civil society, and working groups that include all stakeholders. These practices are explained below.

The search for relevance is one of the driving forces behind Tuning exercises destined to:

1. Understand, discuss and enrich the definition of generic and subject specific competences;
2. Reflect critically on the needs and the strengths of their own region and the thematic and professional fields related to their own field;
3. Know how other regions of the world position themselves in this respect;
4. Provide for a frame of reference for later individual Degree profiling;
5. Be aware of shortages and gaps present in the area;
6. Reflect on the characteristics of the citizens who can best contribute to a culture of the region and world culture of democracy, sustainability and human rights; and
7. Consult with other discussion groups selected in each of the academic communities.

In order to accomplish this first collective task of defining generic competences for the specific region, each Subject Area Group is asked to prepare a list of the generic/ transversal competences considered to be relevant to their perspective region. They reflect and discuss first their own understanding of the socio-economic needs of the area. They, then, analyse lists found in the current literature and those selected by previous Tuning groups such as the 31 generic competences identified in Europe,[27] 27 identified in Latin America,[28] 30 in Russia[29] and 18 for Africa amongst others. In addition, there are the contributions from different participants in the project. This task is finalised when the group has understood, broadly discussed and reached consensus on a selection of competences thought to be the most appropriate for the region. This is done from a rich intercultural perspective since the participants come from different countries and cultural

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[27] See the list of generic competences agreed by Europe on the website of the Tuning Europe project: http://tuning.unideusto.org/tuningeu/

[28] See the list of generic competences agreed by Latin America on the website of the Tuning Latin America project: http://www.tuningal.org

[29] See the list of generic competences agreed by Russia on the website of the Tuning Russia project: http://www.tuningrussia.org

backgrounds. The final stage takes place at the general group level where understanding, debate and agreement has to be reached for all of all the Subject Area Groups involved. It is a process of enrichment and responsibility raising awareness, where relevance takes shape and becomes the common language at group level.

The second task is similar to the first and relates to defining specific competences for a particular Subject Area. The questions reach another level of specificity. From their particular background, how would each group of academics define their specific area? Which competences are the core contributions of each of the areas to the development and advancement of society? Which are the core elements in a particular subject area, field of knowledge or area of interest and how could they be determined? Which competences can be considered core for those attaining a qualification in this particular field and at each of the levels? Which, while not being core, are most needed in the region? The intercultural debates end with the final choice of competences that can define the specific cohorts of learners who reach a degree.

A major check on relevance needs to be undertaken against the entire list which has been agreed. The analysis seeks to measure the degree to which the competences selected by academics are seen by a broader society as leading to basic required levels of employability and active citizenship. This search for relevance has recently been redefined as: "preparing for sustainable employment; preparation for life as active citizens in democratic societies; personal development; [and] development and maintenance, through research, teaching, and learning, of a broad, advanced knowledge base".[30] It is the personal, professional, institutional and social responsibility, which could be referred to in different ways, which responds to the necessity of placing knowledge and capacity at the service of social development and innovation.

The next task relates to the process of consultation. This requires (1) understanding of the reasons behind the consultation as well as the value attached to this practice; (2) selecting the mode of consultation which is considered most appropriate; (3) understanding the technical requirements; (4) acknowledging the existing traditions and literature; and (5) identifying, discussing and agreeing on the most relevant groups to be consulted (other

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[30] Recommendation Rec(2007)6 of the Committee of Ministers to member states on the public responsibility for higher education and research cited in Snežana Samardžić-Marković, "A word from the Council of Europe's Director General for Democracy," in *Reimagining democratic societies: A new era of personal and social responsibility*, eds. Sjur Bergan, Ira Harkavy, and Hilligje van't Land (Strasbourg: Council of Europe Publishing, 2013), 7.

academics, employers, students, graduates, professional bodies, government bodies, associations of citizens, platforms, think-tanks...).

Once the mode of consultation has been agreed and the process of that consultation has been completed, the final stage in this practical process of searching for social relevance refers to the analysis of the findings. This is carried out jointly by the group and special care is taken not to lose any of the contributions coming from the different cultural perceptions which can enlighten the understanding of the concrete reality, the most urgent needs, the recognised strengths, weaknesses, opportunities and threats and of how they should be planned for in terms of educational measures, taking into account the characteristics of the specialists and the citizens, the people who could offer an answer.

2. *The development of meta-profiles*

In the first definition of profiles given above, there was a reference to "the specific (subject) field(s) of learning of a qualification". It is in the tradition of Tuning to build reference points for each of the fields and to offer an understanding of the specific academic area. Communities of Learning from different parts of the world have identified the core elements in terms of competences which would make a degree identifiable and hence recognisable. The analysis of the subject area is an integral part in the Tuning Project. One of the first steps is the debate on what each discipline is about, what the graduates normally do after completing the degree, how the field is structured and linked to other fields. The joint reflection on the specific subject area, the understanding of its identity as an academic field, the essence of its contribution to society and the mapping not only of the field but also of the possible branches and jobs required are a necessary building block in the development of the Tuning process and the essence of future developments. This is a pre-condition, a step and a starting point towards any degree profile-building endeavour.

The need to build degrees capable of gaining *recognition* across the European Higher Education Area was one of the earliest aspirations of the Tuning experience, as well as a driving force. Debates on the core elements of every area constitute one of the essential processes in Tuning. This seeks the collective understanding of a particular field as well as the agreement on what constitutes core as opposed to diverse or specialized competences. It is critical to differentiate between the core elements and the specialized aspects introduced for different reasons into the different subject areas. As a result of this work, lists of specific competences are built and discussed in the different

regions giving those participating ownership over the comprehension of each of the fields as well as ownership over the results.

During the last two years a new step has been developed: Beyond providing the specific competences and carrying the consultation and the definition of the reference points, the Tuning participants undertook a further exercise, that of analysing these reference points, discussing their classification, structure and desired weight. Such questions as how they could be grouped, and as what are the linkages and the differences in importance, have led to the creation of meta-profiles. Tuning Subject Area Groups are real communities of practice following Eckert´s definition[31] perfectly ready to carry out this task at regional level since they are formed by highly experienced academics in their respective areas. Besides, the Tuning Communities are continually open to parallel groups from other regions and other academic fields/areas of practice and can be, therefore, truly considered Communities or Networks of Learning as explained above. Subject Area Groups do not only agree on the lists of components that identified the core and the level of diversification but go further to classify the findings and create a structure, portraying how they understand the ways in which the components relate to each other. These are called meta-profiles.

Thus, a meta-profile is a representation of the structure and combination of competences which gives identity to a subject area. A meta-profile is a mental construct that categorizes competences into major recognized components and illustrates their interrelationship. The meta-profiles have become fruitful tools for reaching an understanding of a field of study at the level of the individual region. This brings a number of advantages. The first is the capacity to create collective understanding and to raise the level of the debate about essential elements and secondary additions in the field of medicine, history, agriculture or architecture, for example. Besides, this collective understanding is important for reaching common comprehension of degrees since it focuses on the centrality of the reference points and its weight in an educational programme. This representation also offers the possibility to reflect and discuss further on the combination of elements. This reflection and debate should normally lead to greater depth in the understanding and quality.

The second contribution relates to recognition. Recognition, very generally speaking, means validating a learning experience. Kohler considers that at a "macro-level", which is probably the more common interpretation of

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[31] Penelope Eckert, "Communities of Practice," in *Encyclopedia of language and linguistics*, ed. Keith Brown (Amsterdam: Elsevier Ltd., 2006), 638-685, http://www.sciencedirect.com/science/article/pii/B0080448542012761

the word recognition is the question of whether or not an academic qualification acquired in one country is valid as a starting point for entering into the labour market — in as much as it is academically based — or for enrolling in a postgraduate programme in another country. In this respect, the focus is on the problem of whether or not an academic qualification acquired in one country is approximately equal to a learning experience, namely a qualification, acquired in another country. "In the case of Europe, this relates to the common European labour market, an essential part of which is the mobility of people within Europe aided by the recognition of qualifications across borders".[32]

Tuning maintains that what is relevant for recognition is to have a proof of having achieved the desired set of outcomes. This approach allows for a broad variety of routes, approaches and processes to achieve the goals. Historians, for example, can study past developments in different geographical settings. They can do so by reference to a very wide range of methodologies. They can also explain contexts citing different traditions, variations of cultural institutions and events which belong to different contexts. However, the outcomes should be comparable in terms of the graduates' capacity to analyse societies in their evolution across time and transparent in the methodologies and rigour used in their research or in the language in which their findings are presented while allowing for academic debate to continue and deepen.

The conscious decision to focus on outcomes leads directly to the relevance of meta-profiles for recognition. The meta-profile presents an understanding not only of the core elements and their description but also of their identification and explanation in a language which is understood and readable. They offer the location, importance and weight of the different factors which make up the whole image. The meta-profiles give the contours within which degrees can be identified and recognised because the key elements are well portrayed.

The third advantage of developing meta-profiles is constituted by the possibilities they offer in terms of the development of joint degrees. Through the consideration of the meta-profile, the main elements of a degree profile may be identified and responsibilities for its construction be shared, based on a common understanding of the whole area. In this age of transnational degrees, tools which favour common understanding are particularly helpful.

Finally, meta-profiles provide a new and different path to regionalisation[33] and ultimately to globalisation. In Tuning, meta-profiles are built at the level of the region: Europe, Latin America, Africa.... jointly built, owned and later

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[32] Jürgen Kohler, "Quality assurance, accreditation, and recognition of qualifications as regulatory mechanisms in the European HEA," *Higher Education in Europe* 28, no 3 (2003): 327.

[33] Cf. Knight, "A conceptual framework".

validated at regional level. There is normally a further level of comparison with other world regions and eventually at global level. However, this way of reaching the global level implies that it is again (as everything in Tuning) a bottom up approach, that is to say from the regions upwards, but in this case, each region owns its own processes and may agree to compare or share with another only if and when and to the extent they choose to do so. This way, the Tuning methodology respects the genuine elements of the local which are at the heart of the process. This makes a significant difference in terms of developing global indicators - bottom up rather than top-down - and creates a new and improved path to reach global indicators.

In order to clarify the concept of the meta-profile some examples are provided below. The case of the meta-profile for Chemistry developed by Tuning Latin America is used as the primary example. It will be compared briefly with two others, the one from a Tuning group in Russia and the other from Africa.

The Chemistry Subject Group from Latin America[34] had taken the following path. The first stage was the very thorough analysis of the competences both generic and subject specific, redefining and reducing them to 17 which were, after a debate, grouped into four major categories called Factors:

— Factor 1 relating to the Learning Process and defined in terms of knowledge, the generic and specific competences related to it (see below).
— Factor 2 was identified as related to Social Values, marking their achievement in terms of the capacity to develop an autonomous and effective ability to develop all the different social, cultural and managerial aspects, ethical practice and knowledge to contribute to the best use of natural renewal and non-renewable resources to the benefit of humankind.
— Factor 3 was identified as the Technological and International Context, including the capacity to communicate in other languages, using diverse and most modern technological and computing resources to develop in the international arena.
— Factor 4 relates to interpersonal competences, focusing on the capacity to take decisions, develop autonomy in professional life, capacity to work in interdisciplinary and trans-disciplinary context related to Chemistry. Also included here is the capacity to organise, plan both individual and team work and solve new situations.

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[34] Gustavo Pedraza Aboytes, ed., *Higher Education in Latin America. Reflections and Perspectives in Chemistry* (Bilbao: University of Deusto, in press).

So the Chemistry competences were grouped as follows:

Table 1

Chemistry subject area Generic (G) and Subject-Specific (S) competences organised in factors. Latin America (Adapted from Pedraza Aboytes, "Higher Education")

Knowledge	Generic competences	Subject-Specific Competences
Factor 1: Learning process		
Understands the nature and properties of atoms and molecules, the laws and principles that determine their interaction and cause chemical reactions and other relevant phenomena. Understands and applies knowledge of chemistry critically in order to analyse, elaborate, synthesise, describe and obtain chemical compounds that have scientific or industrial use.	1G. Capacity for abstract thinking, analysis and synthesis. 2G. Capacity to learn and keep up to date. 3G. Critical and self-critical abilities. 4G. Ability to find and analyse information. 5G. Oral and written communication.	1S. Capacity to apply knowledge and understanding of chemistry to solving qualitative and quantitative problems. 2S. Understand concepts, principles and basic theories of Chemistry. 3S. Interpret and evaluate data obtained through observing and measuring, relating these to the theoretical knowledge. 4S. Capacity to recognise and analyse problems and develop strategies to solve these problems. 5S. Ability to develop and apply analytical techniques. 6S. Capacity to stay up to date with developments in Chemistry. 7S. Capacity to plan, design and implement research projects. 8S. Mastery of chemical terminology, nomenclature, conventions and units. 9S. Knowledge of the major synthetic routes of Chemistry. 10S. Knowledge of other scientific disciplines that facilitate understanding of Chemistry. 11S. Ability to monitor chemical properties, events or changes through observation and measure and to document these in a systematic and reliable form. 12S. Familiarity with the Laboratory Good Practices. 13S. Capacity to act with curiosity, initiative and entrepreneurial spirit. 16S. Understanding of scientific epistemology.
Factor 2: Social Values		
…	…	…
Factor 3: Technological and international context		
…	…	…
Factor 4: Interpersonal Abilities		
….	…	…

The first factor related to knowing, the second to knowing how to be, the third to knowing how to do and finally the fourth looked at to knowing how to be and do.

With this classification a matrix of generic and specific competences for the field of Chemistry was developed (Table 2 below). As a product of the group's reflection and debate, the corresponding relationship between generic and specific competences was found, the relationships between then portrayed according to the classification factors.

Table 2

Chemistry subject area competences: Matrix
Generic Competences (GC) and Subject-Specific Competences (SC) most relevant for the subject area are grouped into factors. (Adapted from Pedraza Aboytes, "Higher Education")

Factor	GC/SC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	x	x	x	x	X		x		x	x	X					x
	2				x	X	x	x	x	x	x	X	X	x			
	3			x	x			x			x	X	X	x			
	4	x	X	x	x	X	x	x	x	x	x	X	X	x			x
	5				x			x			x	X		x			
2	6													x		x	
	7													x			
	8													x	X	x	
	9													x	X	x	
	10													x	X	x	
3	11							x							X		
	12							x						x	X		
	13							x					X	x	X	x	
4	14				x			x					X	x			
	15							x						x			
	16				x			x						x			
	17				x			x					X	x			
	18				x			x					X	x			
	19				x			x					X	x			

Based on the matrix obtained, they built two maps of competences: one with 100% correlation between the competences and the other with 50% correlation as shown in Figure 2.
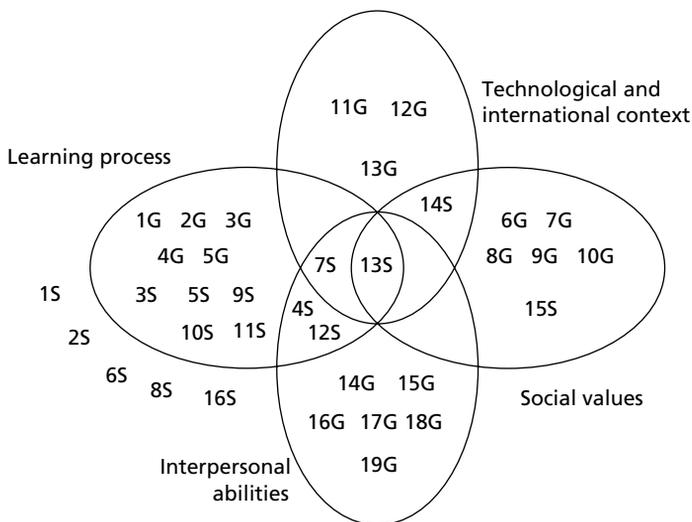
Figure 2

Chemistry subject area meta-profile
The Figure shows interrelation of the Four Factors distinguished
(with a coincidence greater than 50 %), with their respective Generic (GC) and
Subject-Specific (SC) Competences
(Adapted from Pedraza Aboytes, "Higher Education").

This presents an image of the position of each of the competences and the degree of centrality as they were considered for the Latin American Degree Profile in Chemistry. Five competences were shown as very central to the Chemistry degree: 13S (capacity to act with curiosity, initiative and entrepreneurial spirit; absolute centrality for all factors), 7S (capacity to plan, design and implement research projects), 4S (capacity to recognize and analyse problems and develop strategies to solve these problems), 14S (knowledge, ability to apply it and understanding of legal contexts), 12S (familiarity with laboratory good practices). Several conclusions can be drawn but it is clear that these five competences appeared at the heart of any Chemistry degree and they are critical for identity and recognition.

Different methodologies for developing meta-profiles are analysed and presented in the intellectually challenging and thought provoking book *the*

Tuning Meta-profiles for Latin America (in press, in Spanish, Portuguese and English) where 15 different scientific areas explained the roads followed to reach their representations. Each field (agronomy, architecture, business, civil engineering, chemistry, education, geology, history, informatics, law, mathematics, medicine, nursing, psychology and physics) is consistent with its own approach and develops its own mental understanding after a period of research and joint debate. This book is supplemented with 15 publications where every subject area group not only presents the reference points and meta-profile for the area and the methodology used but also the analysis carried out about future trends for the area, and reflections on workload for the specific field in the different Latin American countries as well as the development of a number of competences important for the scientific field.

A similar series of publications has been prepared by the Tuning Russia project and has been published in June 2013 in Russian and in English. They relate to 11 scientific areas: ecology, economics, education, environmental engineering, foreign languages, ICT, interpreting and translation, law, management, social work and tourism. The ICT subject area group used the notion of meta-competences, and their approach and solution will be taken as an example here. Meta-competences are the main categories into which the learning outcomes of a certain higher-education professional area can be grouped. Introduction of the notion of meta-competences permits articulating major strands of competential development and makes clear the academic and professional contexts to which the degrees offered within this academic and professional area are related and to which, consequently, the degree profiles need to be linked.

The final version of the ICT subject area meta-profile is presented in Figure 3, with the different axes and relationships of competences.

The diagram of meta-profile for the ICT sub-area concerned is presented in the figure, with the different axes and relationships of competences. In order to get to this representation, the 20 key competences defined were analyzed one by one. Each competence was located into the cluster of competences with which it was the most closely connected, or, if there was not such cluster, a new cluster was created for this competence. By applying this procedure, the five groups of competences were formed and the meta-competences were identified to represent the core of degrees in the ICT subject area. The core element of the final set of meta-competences is the ability to join the professional community (MGC-3). This meta-competence is achieved by mastering both generic and subject-specific competences, considering ICT sub-disciplines (according to Computing Curricula) and Russian educational standards in this area.
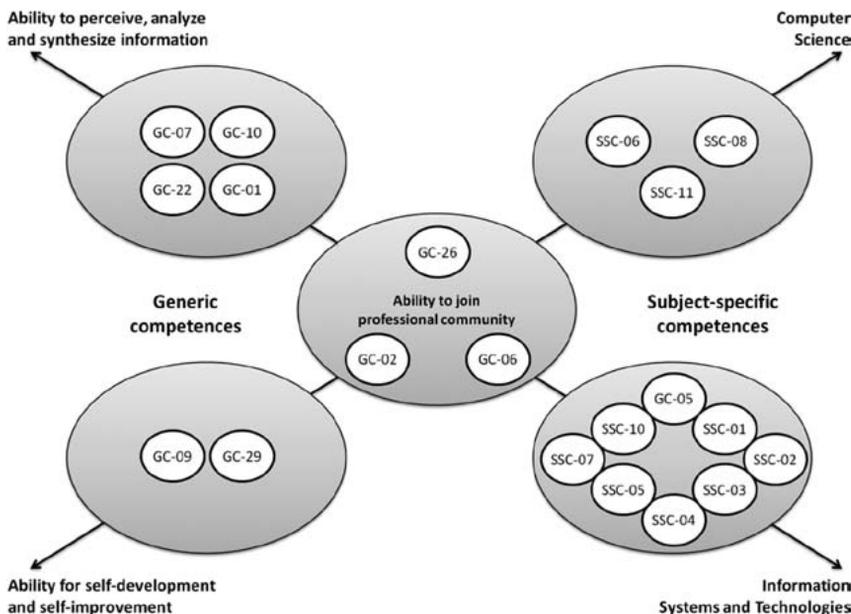
Figure 3
ICT subject area meta-profile. Russia[35].

The generic meta-competences in question are the ability to perceive, analyze and synthesize information (MGC-1) and the ability for self-development and self-improvement (MGC-2). The subject-specific meta-competences are the ability to understand, apply and develop mathematical knowledge, basic laws of natural science and fundamentals of information technologies (MSSC-1), that is the "group of competences related to Computer Science sub-discipline of ICT" and the ability to design, develop, implement and manage life cycle processes of information systems and technologies (MSSC-2), that is the "group of competences related to Information Systems and Technologies sub-disciplines of ICT".

The last example considered here is the case of the Meta-profile for Civil Engineering in Africa (Figure 4 below). After following the processes of identification and consultation as in the previous cases, the experts worked

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[35] Irina Petrova et al., *Tuning Russia. Reference points for the design and delivery of degree programmes in Information and Communication Technologies* (Bilbao: University of Deusto, 2013).

on clustering the generic and subject specific competences which gave an understanding of their respective importance in the degree.[36]
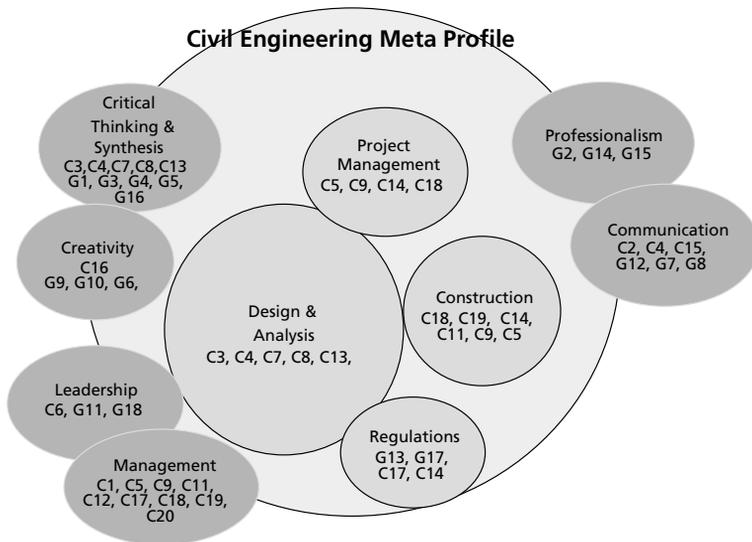
Figure 4
Civil engineering meta-profile (From Tuning Africa Civil Engineering
Subject Area Group, "Final Report", 33).

The group of competences in the centre relates to the capacity to develop processes intrinsic to the field which are important to secure the identity of the area. In addition, it was critical, in the second stage, to make sure that these competences would have an appropriate place in the design of the programme. It was also of great relevance for delivery. These competences relate to the capacity to understand the characteristics of the field and be able to make them operational as a result of the understanding.

The group[37] concurred that the three core clusters mentioned above were identified as central for Civil Engineering curricula. They were also in agreement about the weight of each of the components, with the capacity for Design and Analysis taking up a larger proportion of time. The group

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[36] Tuning Africa Civil Engineering Subject Area Group, *Final Report "Tuning and Harmonization of Higher Education in Africa" Pilot Project. Civil Engineering* (Bilbao: University of Deusto, *in press*).

[37] Coordinated by Haddis Teklemariam and Karola Hahn.

identified 18 generic competences that are crucial for a Civil Engineering Graduate. These 18 generic competences were then clustered at one level below that of the core clusters. The clusters were for the following areas: Critical Thinking, Professionalism, Creativity, Communication, Leadership and the ability to apply Regulations. After following a lengthy process of condensing the 54 subject specific competences as well as looking at the generic competences, the group identified the critical competences and systematized them into mega clusters.

The six clusters, that are those at one level below the core clusters, were further grouped together into *Critical Thinking & Synthesis and Creativity*. The second grouping is *Leadership and Management* and the third is *Professionalism and Communication*. These groupings were done to show that in an African Civil Engineering context, a graduate would need to acquire the same level of skill in all these clusters. The final step of setting up the Civil Engineering Meta Profile was to combine the core clusters with the clusters as shown in the graph. The core clusters are grouped together in a knowledge sphere and this sphere symbolises the capacity to handle in its different dimensions the knowledge that a student should gain in her/his undergraduate course. This includes learning all the different ways and methods of designing in the four different fields of Civil Engineering. The final step was to link optically the generic and subject specific competences to the Meta Profile that was identified. It can also be seen that certain competences appear more than once in the different clusters, as it is believed that the information can be transferred to the student in more than one field and/or in more than one way.

This development of Meta-Profiles created a possibility for a number of uses. Firstly, it allowed a great deal of real intercultural dialogue in relation to the understanding of how the different competences can be located in each degree. The experts, who came from different backgrounds in terms of their country of origin, cultural academic tradition and also of their different professional careers, arrived at an understanding of the main elements to be considered. Secondly, they were able to discuss how the different elements inter-related with each other and the level of centrality they occupied. Thirdly, in relation to the recognition of degrees, they found it of significant help to be able to see the weight of the core competences as against those located more in the periphery. Fourthly, each Subject-Area Group contrasted the meta-profile with a large and quite representative number of universities in the different countries in order to know which were the elements either missing or over-represented and how to improve the degrees in the various contexts. Further and very much to the point, these meta-profiles will serve as reference for the development of degree profiles in terms of the specificity

of the region. Finally, it will be used to compare and contrast the regional perspective with the meta-profiles developed by other geographical areas, a bottom up way of reaching a global perspective.

3. *Consideration of future trends*

A concern for the relevance of higher education means a preoccupation with the present-day societal needs that it can help satisfy, but also a look into the input that degrees can have in shaping future societies and in anticipating social, economic, cultural and political changes. Designing degree profiles is basically an exercise in looking into the future. In the present context, degrees take time to be planned, developed and approved. Students need years to achieve their outcomes and mature in their learning and they are called to serve, to be prepared to act, innovate and to transform future societies and to meet future challenges. Profiles should look as much, if not more, to the future as to the present and this element of taking into account future trends in the specific field or fields where the degree is located, is a requirement for quality. Two things are then needed: to place an emphasis on the necessity of constant updating and to have a system to do so.

The Tuning project in Latin America tried to work on this task and initiated a methodology for introducing the analysis of future trends in the designing of profiles. In preparing to undertake this study, key contributions in the field of future and foresight studies were reviewed, revealing how well developed and sophisticated this foresight studies have become. Thus, methodology was adapted to the specific context placing an emphasis on some of the steps and opening the way for further analysis.

The *first step* looked at the state of the art and the most appropriate approaches available. Key contributions to future studies and strategic foresight fields recommend the study and assessment of the recent history and current situation before attempting to anticipate the future. This was carried out by the Tuning communities which debated current trends. They also discussed the contributions and limitations of the studies in foresight and strategic thinking and with a given methodology they prepared for in depth interviews. A generic text was adapted and the appropriate people general and field experts, leading professionals and academics, considered relevant for each of the different areas, were jointly selected to be interviewed.

The second step related to the general context of education. Many prospective studies have been undertaken in an effort to build future scenarios for higher education and to anticipate the challenges that higher

education may face in the immediate future, as well as in the long run.[38] These studies have underscored a wide array of driving forces that are more than likely to bring change to the state of affairs in higher education. They provide the general setting where the more specific study can rest. These studies focused on the necessary transformation of the traditional role of higher education institutions; they addressed educational policy and macro-tendencies, and sometimes institutional reform. They have proved to be important in analysing the impacts of societal changes. They open the road to *the third step*. This is moving beyond the general context of society and education into the each of the specific fields, analysing the changes in each of the areas at the country, regional and global level. It is at the level of the specific fields that the changes proved a great relevance and necessary to consider the translation of these challenges and emerging needs into curricular reform, and also into implementing them at the level of degrees.

The aim was to identify and draw conclusions for each subject area on the drivers for change present in society and the foreseen challenges over a period of twenty years. Following from this, a number of possible scenarios were developed and the implications for each of the specific scientific and professional areas were reflected upon. *A fourth step* was given by the consideration of the implications for the specific area of each of the scenarios, with the emergence of new professions or professional approaches or tendencies being developed. A very relevant aspect in the analysis was the focus on the new competences required by the general trends or by the specific context, scenarios and professions emerging in the future and how these factors can shape the future of the education in general and of degree profiles in particular.

The impact of future trends and drivers for change are of great significance in degree profile preparation. Diverse methodologies of consultation and scenario building are being developed further at some of the Tuning Communities. The nearly 500 interviews carried out with a selected

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[38] Cf. Harry Anthony Patrinos and George Psacharopoulos, *Education: Past, Present and Future Challenges*. *Policy Research Working Paper* (Washington DC: World Bank, 2011), http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2011/03/29/00 0158349_20110329095336/Rendered/PDF/WPS5616.pdf; Martin Schlotter, Guido Schwerdt, and Ludger Woessman, *The future of European education and training systems: key challenges and their implications*, European Expert Network on Economics of Education, 2008, http://www.eenee.de/portal/page/portal/EENEEContent/_IMPORT_TELECENTRUM/ DOCS/EENEE_AR; Stéphan Vincent-Lacrin, "Building future scenarios for universities and higher education: an international approach," *Policy Futures in Education* 2, no. 2 (2004): 245-263.

methodology in 15 areas in Latin America[39] bring a wealth of material, but it is only an entry point into a more specialised study planned at the level of a specialised research groups which will deepen the perception of the impacts of future trends, challenges and drivers for change and transformation.

4. *The mark of the university where the degree is anchored*

Finally, there is another element to be taken into consideration in degree profiling. This is the university where the degree is anchored. One of the achievements in the post Bologna phase is that degrees have become an institutional venture, a fruit of collegiate activity in both design and delivery. At the present time, it is difficult to find a higher education institution without a mission and a vision that it proclaims to follow. This was not the case in many parts of the world before the 1990s.

Bringing in the individual university context adds the need to reflect on the processes of differentiation present among the world of higher education institutions. Thus, van Vught[40] considers that the educational literature is clear about the desirability of diversity as one of the major factors associated with the positive performance of higher education systems. Based on previous literature, he summarises the arguments in favour of an increase in diversity as: (1) an important strategy to meet students' needs, offering access and opportunities to people from different backgrounds who require an educational environment more suited to their needs; (2) a way to favour social mobility by providing multiple forms and points of entry, transfer and exit allowing a system for the correction of errors of choice and providing for further opportunities for success; (3) a means to meet more adequately the diverse needs of employability; (4) an answer to serve the political needs of interest groups in society to have their own identity and legitimization; (5) a strategy to permit the important combination of elite and mass in higher education; (6) a means to attain high effectiveness due to the concentration and dedication to specific tasks; and (7) a context to experiment with innovation without having to implement innovation at all institutions and allowing for low risk in this experimentation.

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[39] Tuning América Latína, *Cuarta reunión general: documento de trabajo* (2012), 61-62, http://www.tuningal.org/es/publicaciones/doc_download/106-documento-de-trabajo-reunion-de-bruselas

[40] Frans A. van Vught, "Mission diversity and reputation in higher education," *Higher Education Policy* 21, no. 1 (2008): 151-174.

This diversity has been discussed and conceptualized in a model and further portrayed in the U-Map.[41] It has also been developed into a more viable system of ranking — Multirank with institutional diversity at the heart of the system.[42] According to these instruments for analysis and higher education policy development, institutional variety can be seen to concentrate around a number of factors such as: regional orientation, educational needs, innovation or research dominant dimensions or international orientation.

If the usefulness and the potential impact of such tools were not clear, one proof would be the fact that an Australian version of the European university profiling tool has been developed and will be introduced soon in that country.[43] The authors of the new tool also recognize that the results of attempting to use it in Australian universities proved that, contrary to expectations, there was significant diversity among institutions.

The identification and even the strategy to work towards a specific real or desired profile of a Higher Education Institution can be equated to a strategy of striving for quality, attempting to build on the institutional strengths as well as being a way to foster the realization of the university mission. The types of degree offered and their specific characteristics. Thus a university may choose, for example to have a high level of management of technologies as one of its special traits, other may want to have a component of social responsibility present in every profile as a distinctive element. Once the university mission is declared, this has a bearing on the degrees offered by the same university as a sign of quality, service and consistency with the mission.

IV. Conclusions

A number of conclusions can be drawn. The first conclusion is that *Degree Profiles are useful*. They are useful for the learner since s/he is able to identify easily the set of competences and learning outcomes s/he will be required to achieve. It will provide an investment for future life, job opportunities, personal development and preparation to think, act, innovate and transform in a knowledge society, which is both plural and rapidly

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[41] Frans A. van Vught et al., "U-Map: The European Classification of Higher Education Institutions." Enschede: CHEPS, 2010, http://www.u-map.org/U-MAP_report.pdf.

[42] Frans A. van Vught and Frank Ziegele, eds., *Multidimensional ranking: The design and development of U-Multirank* (Dordrecht / Heidelberg / London / New York: Springer, 2012).

[43] Andrew Trounson, "Australia's new accountability tool," *Inside Higher ED*, February 13, 2013, http://www.insidehighered.com/news/2013/02/13/australia-adapts-european-union-tool-comparing-universities

changing. Their usefulness relates also to the transparency that degree profiles provide for the different stakeholders. Learners will have a better chance of knowing in which Institution they wish to enrol and which educational experience to commit. Transparency is closely related to accountability. Once the profile is designed and presented, it is a commitment for the Institution to provide the processes leading to the attainment of what it portrays.

The second conclusion is that *Degree Profiles are important* as focal points to crystallise the many demands which come from different expectations and which would be otherwise difficult to name and to provide with a route map. In our present and still more in our future society, learners have and will have to prepare for jobs which, in some cases will need to be created for the first time. They will need to possess competences which are highly specialised and at the same time generic for rapidly changing contexts in a society which needs to be constantly re-imagined. Profiles are important to channel the thoughts and the innovative experiences which diversify and give options for the future.

The third conclusion is that the *Degree Profiles are needed* for quality in the context of competence-based, student centred learning. A clear profile serves as a meeting point for the institution which offers it, the staff who are responsible for the development of the educational environments and paths to be reached and the learner who will share the responsibility for seeing that the specific set of outcomes is attained. It is particularly the learner who needs to be aware of the results required to be able to choose, contribute and be sure to attain those results. This shared responsibility makes of the degree Profile a necessity which regulates and enlightens the target and the process. The need for degree profiles also comes from the level of mobility present in today's world. People experience growing demands for employment mobility all over the world. This means that large firms need complementary educational and experiential backgrounds that can be understood and easily read. It also means that institutions and individuals must increase their capacity to understand different cultures, systems and backgrounds and even more their outcomes.

With degrees more and more often achieved in a wide variety of countries and continents, it is especially important that the diverse processes and different learning experiences can be identified. The designed processes lead to the achievement of a set of desired learning outcomes that can be recognised anywhere in the world. This is provided that the degree has been designed upon a process of informed reflection and that the degree in question has been acknowledge as high-quality by relevant professional or national bodies. The work of recognition of prior learning would become impossible without well designed and accepted degree Profiles.

The fourth conclusion is that Degree Profiles need to be *complemented by a programme* in which the educational experiences can underpin the development of the set of competences and learning outcomes, allowing for a variety of paths and environments, all within the framework of clear units of learning which facilitate the identification of the weight and the importance of each of the elements. It is the programme which makes it possible to verify and assure the consistency of the outcomes and the paths to achieve them.

The fifth conclusion is that degree profiles *ought to follow a road map* for their development. It is important to undertake consultation in respect of the social and professional needs so that the meta-profile contributes to the understanding of the subject area and the agreement on it within the region. Equally, future trends need to be taken into account in a context of rapid change. In the same way, the mission of the institution and the central nature of the degrees would, if appropriately carried out, give a dimension of consistency in relation to university mission as well as a level of diversity as between the institutions.

The last conclusion is that degree profiles *are decisive for Higher Education* due to the impact that they are called to have on society. They can display a significant level of relevance as they relate to social needs. They can prove a useful tool as they develop as an important element in the formation of a region, thus showing the capacity to foster a political dimension. Degree profiles are able to enhance the responsibility of citizens and can create cohorts of young people with deeper democratic culture, a culture of dialogue, of respect for the difference and of commitment to the creation of quality of life for all. This quality needs to be created particularly for the most vulnerable members in society: a quality measured by the capacity of empowerment and of making education an effective tool to transform societies.

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Columbus' Egg?
Qualifications Frameworks, Sectoral Profiles and Degree Programme Profiles in Higher Education

Robert Wagenaar

Abstract: During the last 25 years international mobility has become paramount in higher education. International and national authorities and higher education institutions have set-up effective structures to facilitate and implement this process. It has become part of a higher education modernization process which obtained a serious push with the start and development of the Bologna Process in Europe as of 1999. However the same authorities have been far less active in finding answers on how to facilitate this process in terms of curriculum development, quality assurance and recognition. The initiative was largely left to individuals supported by their employing organizations. These have proven to be visionaries. Their efforts have led to competence and learning outcomes based descriptors for meta-qualifications frameworks and to important reference points / meta profiles for subject areas. Academics have been strongly involved in developing the latter and by doing so have offered a more sustainable basis for implementing reforms based on the student-centred approach, which is so relevant for today's world in terms of employability and citizenship. The most recent development has been the development of Tuning sectoral qualifications frameworks which allow for bridging the two European meta-frameworks, the EQF for Lifelong Learning and the QF for the European Higher Education Area, with sectoral and degree profiles. This can be seen as a breakthrough initiative because it offers us a transparent model which is developed and owned by academics and can easily be used by all involved in programme design and development, quality enhancement and assurance and recognition of (periods of) studies.

Keywords: qualifications frameworks; sectoral qualifications frameworks; sectoral profiles; degree programme profiles; reference points; learning outcomes; competences.

I. Introduction

During the last two decades the internationalization of higher education has really taken off with huge numbers of students experiencing cross border education, identifying and meeting their interests and needs in a global environment, as well as having an international experience. It might be seen on the one hand as a spin-off of the massification of Higher Education, which

developed since the 1960s, and of the internationalization of the labour market on the other. In a relatively short period a non-structured form of free transnational movement of individuals has transferred into a well-structured industry. Probably there is no equal in the history of higher education where so many new jobs, based on new skills and competences, were created in such a short period, not only at institutional but also at national and international level. Academic staff, who, at first, played a central role in organizing student-mobility in and between cycles, was in no time replaced by 'real professionals'. The explosion in the numbers of students' mobility forced such a development, but there also followed the notion that 'overseas students' could be experienced as a very serious and in many cases crucial source of income: international students as a panacea for growth and budget balance. At the same time one may observe that mobility — although rewarding for individual institutions and countries — has very often been costly for the individual learner due to a lack of structures and related tools to accompany this process. It has been well documented that the internationalization of higher education has often prolonged the formal periods of study unnecessarily and that recognition of learning abroad had its serious flaws. This relates, for example, to the recognition of mobility periods but also to three and four-year bachelor programmes and the transfer from cycle to cycle. A recent report shows us that still at least one quarter of European students do not receive full credit for their studies taken abroad.[1] Therefore the (academic) debate about the 'quality' of internationalization was paramount from its very start.[2] It is, however, remarkable that this debate has not been related directly to the lack of involvement of academics and the professionalization of the internationalization agenda.

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[1] Erasmus Student Network (ESN), "Problems of Recognition in Making Erasmus 2010 (Prime 2010). Final Report. Public Part," Brussels: Audiovisual & Culture Executive Agency, Education and Culture DG, European Commission, 2011, http://eacea.ec.europa.eu/llp/project_reports/documents/erasmus/accompanying_measures_2010/era_am_177245.pdf.

[2] Margarita Jeliazkova, and Don F. Westerheijden, "Systematic Adaptation to a Changing Environment: Towards a Next Generation of Quality Assurance Models," *Higher Education* 44, no. 3-4 (2002): 433-48; Jane Knight, and Hans de Wit, *Quality and Internationalisation of Higher Education* (Paris: OECD Publishing, 1999); Dirk Van Damme, "Internationalization and Quality Assurance: Towards Worldwide Accreditation?" Paper commissioned for the IAUP XIIth Triennial Conference, Brussels, 11-14 July 1999; Adinda van Gaalen, "Internationalisation and Quality Assurance, " in *EAIE Professional Development Series for International Educators, Volume 4*, Amsterdam: European Association for International Education (EAIE), 2010; Marijk C. Van der Wende, and Don F. Westerheijden, "International Aspects of Quality Assurance with a Special Focus on European Higher Education," *Quality in Higher Education* 7, no. 3 (2001): 233-45; and Frans A. van Vught, and Don. F. Westerheijden, "Towards a General Model of Quality Assessment in Higher Education," *Higher Education* 28, no. 3 (1994): 355-71.

The question posed here is whether qualifications frameworks, sectoral profiles or frameworks - besides degree programme profiles or reference points - are indispensable instruments for national and international higher education in the world of today? Are these Colombus' Egg to be used by content experts to facilitate recognition, programme design and delivery and quality assurance and quality enhancement? It is noticed in this respect that public authorities in general - although successfully responding to the growth of international education - have been slow in developing effective structures for organizing and guaranteeing the recognition of studies taken in another country and at another institution — both at degree level and in terms of mobility periods, at national as well as international level. This also applies to programme design and quality enhancement in Europe and in other regions in the world. This is actually an important observation, given the interest of countries in having a well-educated labour force, based on state of the art and officially recognized degrees taken at home or abroad. In practice, it were not so much public authorities but rather groups of individuals supported often by institutionalized organizations that took decisive initiatives to fill the gap. This article intends to show that this state of affairs had its advantages and its disadvantages. It will also be observed that much relevant work has been done by many, and that substantial progress has been made but in particular outside the formal structures by projects, etc.

This article concentrates on developments in Europe, because these have been a catalyst and stimulus for relevant initiatives elsewhere in the world. As stated, important steps have been made over time. Many organizations and initiatives played a role in this respect such as the Bologna Follow-up Group, the European Commission, ESIB/ESU, EUA and EURASHE, the Council of Europe, the ENIC-NARICS, ENQA, the Joint Quality Initiative (JQI) — initiator of the so-called Dublin Descriptors — and the Tuning Educational Structures in Europe project. It was the Tuning initiative, launched in 2000, which gave academics back their voice in the theatre of the modernization and internationalization of higher education by focusing on the content and role of education in realizing the Bologna Declaration.

Besides important initiatives at national level, such as the development of national qualifications frameworks in Ireland and Denmark, the Quality Assurance Agency benchmark statements in Britain, the Joint Quality Initiative (JQI), Tuning, EU Thematic Network Programmes (TNPs) and the European Commission should be singled out here, because they had the largest impact at structural level internationally, as will be discussed below. 'Structural level' means here the framing of higher education in its international perspective to facilitate recognition of degrees and periods of studies: the formulation of descriptors for the three cycles (bachelor, master

and doctorate) and the associated degree or short cycle in HE, and the development of reference points at subject area level, which later gave birth to Meta Qualifications frameworks and — in the context of the Tuning initiative - Meta-Profiles and Sectoral Frameworks.

II. **Change of paradigm**

In retrospect, the years 2002 and 2003 can be seen as the most crucial years in the modernization and internationalization of European higher education. All major decisions and directions were taken and laid down in that period. A number of international 'Bologna seminars' took place during those years and most of all to the Berlin Communiqué, "Realizing the European Higher Education Area" (19 September 2003), in which both the development of an agreed set of standards, procedures and guidelines on quality assurance and the elaboration of an overarching framework of qualifications were included as means to create one European Higher Education Area. But even more crucial was the inclusion in the Communiqué of the paragraph: "Ministers encourage the member States to elaborate a framework of comparable and compatible qualifications for their higher education systems, which should seek to describe qualifications in terms of workload, level, learning outcomes, competences and profile";[3] followed by "They also undertake to elaborate an overarching framework of qualifications for the European Higher Education Area",[4] as well as a number of Bologna (related) conferences.

> Within such frameworks, degrees should have different defined outcomes. First and second cycle degrees should have different orientations and various profiles in order to accommodate a diversity of individual, academic and labour market needs. First cycle degrees should give access, in the sense of the Lisbon Recognition Convention, to second cycle programmes. Second cycle degrees should give access to doctoral studies.[5]

By focusing explicitly on *workload, level, learning outcomes, competences and profile*, the ministers in practice announced a change of paradigm regarding the design and delivery of degree programmes. By including this statement, which in effect was inspired by the Tuning project, politics

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[3] European Ministers for Higher Education, " 'Realising the European Higher Education Area': Communiqué of the Conference of Ministers Responsible for Higher Education in Berlin on 19 September 2003 [Berlin Communiqué]," Berlin: Bologna-Berlin2003 Project Team, 2003, http://www.bologna-berlin2003.de/pdf/Communique1.pdf

[4] Ibid.

[5] Ibid.

intervened clearly - probably without realizing it — in the prime responsibilities of higher education institutions and their teaching staff by making the switch from *what* should be learned, to *how* it should be learned. At that time the focus was still on teaching rather than on learning. Who had heard then of input versus output based teaching and learning or staff centred versus student oriented teaching and learning? For obvious reasons in the Communiqué a reference is made by the ministers to "welcome the commitment of Higher Education Institutions and students to the Bologna Process and recognise that it is ultimately the active participation of all partners in the Process that will ensure its long-term success." A crucial statement, which has proven mainly to be paying lip service in the years that followed. Only six years later in the Leuven / Louvain Communiqué a clear reference was made again to the important role of the higher education institutions and their staff in implementing the reforms. However, again the statement was not accommodated by a plan of action to link up with the higher education institutions.[6]

The Bologna follow-up group, which was installed to stimulate and monitor progress of the Bologna Process, never got directly in touch with initiatives to develop models/methodologies/ approaches to implement the - very costly - change of paradigm announced in Berlin. Instead, it was the European Commission that decided to support a very relevant initiative from the academic world by co-financing the Tuning Educational Structures in Europe project and by inviting the TNPs (also co-financed by the EC) to take the Tuning approach on board. Other European networks, in particular Engineering, decided to go down that road independently. Officials of DG EAC, of which David Coyne and Peter van der Hijden should be singled out, were instrumental here. They, more than others involved in the process, saw the implications and potential of the Berlin Communiqué. This is remarkable given the fact that before the Berlin summit, two important Bologna seminars took place, which directed the steps set in Berlin by the ministers. The first one was named *Working on the European Dimension of Quality* (Amsterdam, March 12-13, 2002) and the second *Qualifications Structures in European Higher Education* (København, March 27 — 28, 2003).

The first one was an initiative of government officials of Flanders and the Netherlands, in particular of Marlies Leegwater and Noël Vercruysse. This

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[6] European Ministers for Higher Education, "The Bologna Process 2020 - the European Higher Education Area in the New Decade: Communiqué of the Conference of European Ministers Responsible for Higher Education, Leuven and Louvain-La-Neuve, 28-29 April 2009 [Leuven Communiqué]," 2009, http://www.ond.vlaanderen.be/hogeronderwijs/bologna/conference/documents/leuven_louvain-la-neuve_communiqu%C3%A9_april_2009.pdf.

seminar fitted well in the discussion about quality management and quality assurance regarding national and international education which had developed since the beginning of the 1990th.[7] This seminar was based on the work of an *informal network* which was initiated by individuals after the Prague Bologna summit in 2001, the so-called *Joint Quality Initiative* (JQI). This group consisted of individual government officials and representatives of quality assurance organisations, mainly from the Northern part of Europe. The JQI was originally intended to be a network focusing on quality assurance and accreditation in relation to the bachelor and master programmes in Europe. At a later stage it also covered the short cycle or associated degree and the doctorate. Its contribution is the definition of descriptors for the higher education cycles, which became known as the *Dublin Descriptors*. These were developed between 2001 and 2004 and were somewhat later used as the basis for the *Qualifications Framework for the EHEA* which was endorsed by the ministers of education in 2005 at the Bergen Bologna summit. The importance of this initiative cannot be stressed enough. The initiators understood perfectly well that a systematic approach was the only way forward to make 'Bologna' successful. But by phrasing the descriptors in terms of expected /required outcomes the group revolutionised the discussion about the modernization of higher education in Europe. In practice they transferred a debate, which had slowly developed in a number of northern European countries, into a European one.

   This is no different from another initiatives which was taken by a group of universities in close cooperation with the European Commission in the autumn of 2000, the *Tuning Educational Structures in Europe* project. Immediately after the Bologna Declaration was signed, a group of ECTS experts developed the idea that Bologna would not work without a radical change of concept regarding the design and delivery of degree programmes. It was concluded that ECTS had reached its limitations by focusing on

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[7] Carolyn Campbell, and Marijk van der Wende, "International Initiatives and Trends in Quality Assurance for European Higher Education. Exploratory Trend Report," Helsinki: European Network for Quality Assurance in Higher Education, 2000, http://www.enqa.eu/files/initiatives.pdf; Lee Harvey, and Diana Green, "Defining Quality," *Assessment & Evaluation in Higher Education* 18, no. 1 (1993): 9-34; Dirk Van Damme, "Trends and Models in International Quality Assurance and Accreditation in Higher Education in Relation to Trade in Education Services," a paper presented at the OECD / US Forum on Trade in Educational Services, Washington, D.C., 23-24 May 2002, http://www.unizg.hr/fileadmin/upravljanjekvalitetom/pdf/docsmjernice/oecd_trends_and_models.pdf; and Frans A. van Vught, and Don. F. Westerheijden, *Quality Management and Quality Assurance in European Higher Education: Methods and Mechanisms* (Luxembourg: Office for Official Publications of the Commission of the European Communities, 1993).

student workload only. Using a credit system in itself was already a major step forward in making degree programmes more transparent and flexible, but it became clear over the years that recognition of periods of studies in terms of both transfer and accumulation would never work when the level of competence that is developed in the process is not paramount. It was also concluded that the use of cycles requires not only the redesigning of degrees, but also - preferably internationally - agreed reference points for subject areas. The necessity of points of reference was also understood in the UK, where the Quality Assurance Agency started in those years its policy of developing subject benchmark statements of which the first were published in 2002. They have proven to be of great value not only for UK higher education but also for Europe as a whole.[8] By focusing on the outcomes of the teaching and learning process, the focus shifts from the teacher/professor as the main source of knowledge to the student as the focal point. No longer should the transfer of knowledge be central in the learning process but the shaping of a graduate who would be able to take up his or her role in society immediately after graduation on the basis of the competences required. For that reason the Dublin descriptors distinguish different types of outcomes, phrased in terms of competence development. In accordance with the same line of thinking, in Tuning the focus is on transferable or generic competences besides subject specific ones.

III. **Amsterdam consensus**

At the Amsterdam Bologna seminar of March 2002 it was concluded that general descriptors for the different cycles and reference points at subject area level should go hand in hand. Its conclusion was far reaching in directing the Bologna Process:

> There is a widely-shared consensus that the 'Dublin Descriptors', defining key outcomes for Bachelors and Masters programmes in general (…) are useful. These generic descriptors are complementary to the more specific outcomes of the Tuning project (…), which have been developed at the level of areas of knowledge ('disciplines') In other words, the 'Dublin Descriptors' need to be 'tuned'. Moreover, Tuning project outcomes are not to be taken as prescriptive. In that respect, it should be remembered that outcomes do not define curricula. (…) The approach to quality building on a combination of the 'Dublin Descriptors' and Tuning project outcomes

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[8] Quality Assurance Agency for Higher Education (QAA), http://www.qaa.ac.uk/.

apply to 'traditional' delivery of higher education as well as to transnational education, distance education, etc.[9]

It was also concluded at the conference that "Gains from the Tuning project further include that there is a broader than expected consensus among European higher education institutions on descriptors of their programmes, starting from outcomes rather than starting from curriculum inputs and elements. At the same time, there is less than expected diversity regarding length/credits of programmes." We will come back to these statements below.

It is worth noting that related to the above, an important discussion arose in Amsterdam about the relative value of programme versus institutional approaches to quality assurance:

> Both are important, was the general view. The 'Dublin Descriptors' as well as the Tuning project outcomes are directed primarily at programme level approaches. Many, including expressly the student representatives, gave programme level quality assessment as the priority for public policy, *inter alia* because this would give more direct assurance of quality ('consumer protection'). Institutional quality assurance was mostly seen as the responsibility of autonomous, well-managed higher education institutions, even though some participants voiced the opinion that with 'mass' or 'universal' higher education, and in the emerging network society, such coherent higher education institutions will become ever rarer.[10]

IV. Qualifications framework for the EHEA

Twelve months later, in 2003, at the Bologna seminar *Qualifications Structures in European Higher Education,* the discussion continued. At this conference the role of the JQI and Tuning were again highlighted, this time explicitly in relation to the development of a European and National Qualifications Frameworks. The rapporteur of the conference Sjur Bergen, Council of Europe, stipulated correctly that all higher education systems at the time already have their 'qualifications framework' but that these are (mainly if not only) based on input factors and formal characteristics. The innovation to be realized was basing such frameworks on the learning outcomes of the educational process. In his words: "A national qualifications

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[9] Don F. Westerheyden, and Marlies Leegwater, "Working on the European Dimension of Quality. Report of the Conference on Quality Assurance in Higher Education as Part of the Bologna Process, Amsterdam, 12-13 March 2002" (Zoetermeer: Ministry of Education, Culture and Sciences, 2003), 97-98.

[10] Westerheyden and Leegwater, "Working on the European Dimension of Quality,": 98.

framework is simply a systematic description of an education system's qualifications where all learning achievements are measured and related to each other. A European qualifications framework would amount to an agreement about a common structure or architecture within which different national qualifications could be located". The conference agreed upon a number of important recommendations for the Berlin summit of ministers of education. The most relevant ones are listed here for this article:

1. At each appropriate level, qualifications frameworks should seek to describe the qualifications making up the framework in terms of workload, level, quality, learning outcomes and profile. An EHEA framework should seek to describe qualifications in generic terms (e.g. as first or second cycle degrees) rather than in terms specific to one or more national systems (e.g. Bachelor or Master);

2. Qualifications frameworks should also seek to describe these qualifications with reference to the objectives or purposes for higher education, in particular with regard to four major purposes of higher education: preparation for the labour market, preparation for life as active citizens in democratic society, personal development and development and maintenance of an advanced knowledge base;

3. Within the overall rules of the qualifications frameworks, individual institutions should have considerable freedom in the design of their programmes. National qualifications frameworks, as well as an EHEA framework, should be designed so as to assist higher education institutions in their curriculum development and design of study programmes. Qualifications frameworks should facilitate the inclusion of interdisciplinary higher education study programmes.[11]

The reader will have noticed that in the Berlin Communiqué *quality* as a descriptor is replaced by *competences*. This is done for an obvious reason, namely that quality does not fit in this context, as being an indicator which encompasses all others.

V. **Contribution of Tuning**

From the day the Bologna Declaration was signed, a fear was expressed that the Bologna Process would lead to the harmonization of higher education

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[11] "Bologna Seminar on Qualification Structures in Higher Education in Europe. Recommendations," Copenhagen: Bologna-Berlin2003 Project Team, 2003, http://www.bologna-berlin2003.de/pdf/Results_copenhagen.pdf.

programmes. This was in particular voiced by higher education institutions and (their) academics. Bologna being a governmental process this fear was real, as was also stated by higher education experts like Dirk van Damme.[12] It was another reason for the group of ECTS experts to develop Tuning. Clearly related to the first argument, mentioned before, that the focus in higher education should switch to the outcomes of the learning process as well as to the learner. In the opinion of the Tuning initiators educational structures, degree programmes and the actual teaching and learning process should be the prime responsibility of higher education institutions and their staff. The basic thought was that higher education programmes should allow for diversity, flexibility and individual learning pathways, with full respect for consistency, level and quality. Moreover, the process of re-designing curricula should lead to programmes which would better match the requirements of the labour market and society. The name Tuning was chosen to express its goal to look for common ground, reference points, which allow for and stimulate profiling of individual degree programmes. For that reason a ten-step approach was developed for designing new programmes and re-designing and enhancing existing ones. The first three steps are of particular relevance here: 1. determine the need for and potential of the degree programme by consulting stakeholders and deciding whether the programme proposed will satisfy actual professional and/or social demands; 2 define the profile and key programme competences of the programme by defining the body of knowledge, the focus and orientation, identifying the employment sectors and its contribution to developing citizenship and personal culture; 3. formulation of the programme learning outcomes. The full ten-step approach is included in the publication *A Tuning Guide to Formulate Degree Programme Profiles*.[13]

VI. **Reference points — Degree programme Profiles**

A condition for profiling of degree programmes is that there should be an agreed (preferably internationally) reference framework available that consists of sets of common points of reference. These frameworks are important as a means to decide whether a degree programme meets the minimum quality standards and therefore deserves to be accredited. Reference

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[12] Dirk Van Damme, "European Quality Assurance: Development and Challenges," Brussels: Steering Committee of Tuning Project, 2001.

[13] Jenneke Lokhoff et al., eds., *A Tuning Guide to Formulating Degree Programme Profiles* (Bilbao, Groningen, and The Hague: University of Deusto, 2010).

points make provision for diversity, freedom/flexibility and autonomy, and allow higher education institutions to focus on their mission, position and role in the higher education environment. While some universities want to position themselves as international players, other may prefer to focus on their national and/or regional and/or local role. Also being research or more applied in orientation is of relevance. From 2007, Tuning published its *Reference Points for the Design and Delivery of Degree Programmes.[14]* Provisional documents were published in 2005. Many Thematic Network Programmes also published their Tuning reference points, sometimes within the framework of Tuning, sometimes on their own, but always according to an agreed common format. This format was published in 2005 and contains 6 items: 1. Introduction to the subject area; 2. Degree profile(s); 3. Learning outcomes & Competences — level cycle descriptors; 4 Workload and ECTS; 5. Learning, Teaching and Assessment; and 6. Quality enhancement. Item 2 includes both information about typical degrees offered in the subject area as well as typical occupations held by the graduates in the subject area. These reference-points brochures were validated by committees of independent peers in 2007. The way in which these reference points within the Tuning context were (further) developed and agreed, is explained in detail in the contribution of Julia González in this volume of the Tuning Journal.

The Tuning reference points are based on the distinction between generic or transferable competences and subject specific ones. As is well known, Tuning uses competences in an all- encompassing way, covering knowledge, skills and wider competences as abilities, responsibilities, and attitudes. Tuning highlights the use of generic competences because of its relevance for society, both in terms of employment and citizenship. In its European stakeholders' consultations in 2001 and in 2008 the relevance of this approach was confirmed. The outcomes of consultations in other regions of the world lead to comparable outcomes.

In 2008, consultation based on 7087 responses, well spread over four stakeholder groups, academics, employers, graduates and students, four competences are ranked highest by all of them:

— Ability for abstract and analytical thinking, and synthesis of ideas
— Ability to apply knowledge in practical situations
— Knowledge and understanding of the subject area and understanding the profession
— Ability to identify, pose and resolve problems

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[14] Tuning Educational Structures in Europe (Tuning Europe), http://www.unideusto.org/tuningeu/.

Academics and graduates ranked Ability to learn and stay up-to-date with learning as number five, while employers and students ranked Ability to work in teams as the fifth important competence. Also the ability to communicate both orally and through the written word in first language was thought being very important, although it was ranked lower.

This outcome is relevant when compared to the Dublin descriptors as included in the *Qualifications Framework for the EHEA*: Knowledge and understanding, Applying knowledge and understanding, Making judgments, Communication skills and Learning skills. It shows that the Tuning approach can easily be related to the structure of the QF for the EHEA. It also underlines that the descriptors as developed by the JQI are sensitive ones and that these are indeed complementary to the Tuning approach, both in terms of level descriptors and reference points. Together, they should therefore be applied at degree programme level. This is also what is happening in practice, although — depending on the country involved — it has proved to be a slow process.

VII. **European Qualifications Framework for Lifelong Learning**

When the QF for the EHEA was endorsed at the Bologna summit of ministers in Bergen in 2005, the European Commission had already taken the initiative to develop a *Qualifications Framework for Lifelong Learning* (EQF for LLL), to combine the outcomes of the Bologna Process and the Copenhagen Process for Vocational, Education and Training (VET) launched in 2002. Experts from both the Higher Education sector and the VET sector were involved in designing this framework, although the VET sector was the prime authority in the process. This was probably due to the fact that the HE sector already had its own Qualifications Framework. After intense discussions it was agreed to make a distinction between three types of descriptors: knowledge, skills and wider competences. While the QF for EHEA has stand-alone descriptors, it was decided that the EQF for LLL descriptors would have a structure of 8 levels and be cumulative, where a level builds on the previous level. In 2008 the European Parliament and the Council of Ministers passed its *Recommendation on the establishment of an EQF for LLL*. The member states were invited to create their National QF based on the EQF features, and sectors were called upon to develop Sectoral Qualifications Frameworks. This challenge was taken up by Tuning in 2008. It had numerous reasons to do so.

But before linking this development to Tuning, it is important to have a closer look at the definitions of skills and competences being used in the EQF

for LLL. "Skills" means in EQF terms "the ability to apply knowledge and use know-how to complete tasks and solve problems. Skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments)." By "Competence" is meant "the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development." However, it is added that in the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy. As in the case of Tuning - an encompassing definition of competences is used. It is, however, problematic that in the final version the EAC decided to remove 'wider' as a crucial addition to the label descriptor 'competence'. By doing so it created a contradiction in terms. This is confirmed by Mike Coles, the main author of the framework, in 2012. It is also contrary to other European Commission actions where the notion of key competences is flagged. For example the European Framework of Key Competences for Lifelong Learning adopted in 2006: "It identifies and defines the key abilities and knowledge that everyone needs in order to achieve employment, personal fulfilment, social inclusion and active citizenship in today's rapidly-changing world." It is no wonder that the EQF initially lead to confusion in particular in the higher education sector.

VIII. **Tuning Sectoral Qualifications frameworks or profiles**

Although the Bologna Follow-Up Group concludes after comparing the two systems that these are compatible, in reality this is not quite true. Not only is the QF for the EHEA ECTS-credit based and the other one is not, it is also constructed on the basis of a different philosophy. The Tuning experts' group is now faced with a number of issues: two competing frameworks for the Higher education sector, one based on stand-alone descriptors and the other one on cumulative descriptors and the challenge to bridge the two meta-qualifications frameworks and the Tuning reference points or meta-profiles at subject area level. From this challenge the idea was born that a solution might be found in developing sectoral qualifications frameworks as an intermediate between the subject area level and the meta-level. This requires a grouping of academic programmes in terms of domains or sectors. A sector or domain is understood here as a combination of related fields of study which are based on more or less comparable learning profiles. Not surprisingly five to six sectors are distinguished: Humanities and the Creative and Performing Disciplines, Engineering, Natural Sciences, Health Care and

Social Sciences. The order used here is based on the mutual relationship between the sectors and can be visualized as follows:
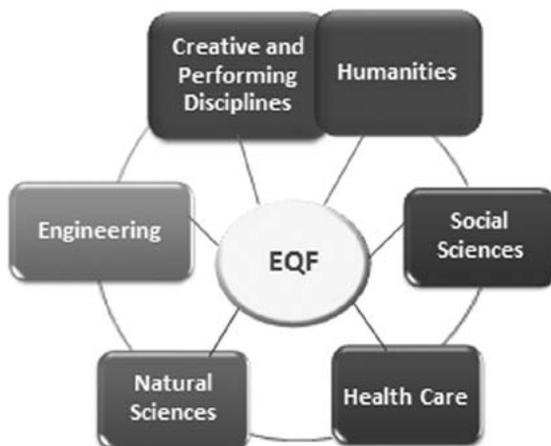
From 2008 to 2010 a first project was implemented, to develop a Tuning SQF for the Social Sciences. In the project the sector is represented by the following subject areas: Business Studies, European Studies, Education Sciences, Occupational Therapy and Social Work, Law, Psychology and International Relations. The project designed a framework which not only covered the higher education sector, that is the levels 5 to 8 of the EQF, but also the levels 3 and 4 (being the entrance level to higher education). This framework can be seen as being pioneering and innovative, but most of all a major step forward to bridge the different initiatives so far. The approach of developing the framework by using the strategy of reflection, debate and consultation is well described in the final report of the project. The project itself highlights the fact that it struggled (initially) with the division between skills and (wider) competences. This is reflected in its outcomes. We will come back to this.

The project as such is daring. Not only would it combine the reference points which were prepared for the different subject areas during a painstaking process, it also would relate them to the principles of the EQF for LLL with full respect for the Descriptors of the QF for the EHEA. The outcome of this process was twofold: a definition of a short profile for the sector and the aligned matrixes of expected levels of achievement - based on the three EQF descriptors knowledge, skills and wider competences - defined for each level.

The well-formulated profile offers insight in what the sector stands for and how it distinguishes itself from other sectors:

> The social sciences are concerned with the study of and the provision of services to society as articulated in individuals, groups and communities. They examine social structures and organizations (economic, legal, cultural, religious, political, etc.) in both space and time. They explore the dynamic processes and inter-relationships between them and how different meanings and attitudes are created and have to be negotiated. Their scope ranges from the minutiae of human behaviour and development to large-scale social movements. Social Sciences have a strong ethical dimension related to social justice, wellbeing, cohesion and citizenship.[15]

The profile as such shows the potential of this approach. When Tuning developed the sectoral philosophy - as a preparation for SQF-projects - it assumed that students move mostly within one sector or between two related sectors. This implies that recognition issues are also relating to this scope. As an example the subject area of History might serve well. Positioned in Humanities it has clear relations with Social Sciences and vice versa. This is reflected in the matrixes of learning outcomes for the different levels which not only offer reference points for the disciplines covered by the SQF for Social Sciences, but also for related academic fields. However, there is a weakness in the approach taken by the Social Sciences SQF project. It kept close to the cumulative approach of the EQF for LLL. One of the consequences of this is that the learning outcomes statements at level 7 must be read in in conjunction with those defined for the levels 5 and 6. A result of this approach was that learning outcomes statements for the descriptors of wider competences at level 8 were not thought necessary, because they were already covered by lower levels. An issue here is that the learning outcomes identified for the levels 7 and 8 covering knowledge and skills are phrased in a rather open way, and require that the expected achievement levels 5 and 6 are taken into account as well in order to understand what is actually covered in hard fact. By linking different types of knowledge and awareness to neutral phrases like 'a specialist area or specific field of study or practice' they can be used for every sector independent of the discipline / field of study covered. This seems unavoidable in this set up because at those levels the sector tends to encompass a wide range of specializations taught, learned and assessed in the many academic fields covered.

The key problem with cumulative descriptors which define expected levels of performance is that this approach makes the process of recognition of periods of studies based on the competences obtained and the learning outcomes achieved a very complex one and, therefore, it becomes the work

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[15] Tuning Europe, "Tuning SQF for the Social Sciences," http://www.unideusto.org/tuningeu/tuning-sqf-social-sciences.html.

of specialists. They are simply too difficult to handle and therefore to apply. This implies that academics, although expected to develop and to work with competence statements and programme and module learning outcomes, are not well served when it comes to the recognition of learning. This is not beneficial because, in the last resort, Boards of Examiners that consist of academics and individual professors usually have the final say in matters of recognition at institutions. Therefore, it is of crucial importance that the instruments which facilitate (inter)national mobility and recognition are owned by the academic staff and used on a daily basis. It seems to be the only reasonable way to convince academics to develop an open mind regarding learning that has been obtained elsewhere. Tuning and Thematic Networks have shown us that trust and confidence is strengthened considerably when academics have a chance to learn to appreciate each other in open dialogue about their field of study.

This was strongly kept in mind when in 2010 the Tuning SQF HUMART project took over the banner from the Tuning SQF Social Sciences project. HUMART stands for Humanities and the Performing and Creative Arts. Although it was realized when defining the project that the definition of Humanities commonly includes visual and performing arts, based on experience so far, it was thought that it might not be feasible and helpful to include subject areas involved in a single framework. Therefore, the option was kept open to develop two frameworks, one for the Humanities and one for the Performing and Creative Disciplines.

The main objective of HUMART was largely comparable to the one of the Social Sciences: to develop an easily readable SQF framework which would be defined and owned by academics. It should be consistent and be based on stand-alone descriptors in order to bridge the two existing European meta-frameworks. A three-step approach was applied. A first step was to re-phrase and re-order the existing sets of the subject area descriptors for the Bologna three cycles on the basis of the EQF for LLL. This applied to history, visual and performing arts and architecture. Music - also involved — had already made this step at an earlier stage. For Literary Studies, Linguistics, Art History and Theology and Religious Studies reference points were still to be developed at European level. A second step was to compare the descriptors of the subject areas involved. This comparison formed the basis of the final step: to design and define the sectoral qualifications framework. When the second phase was applied, it became clear that on the basis of comparison it was greatly preferable to develop two frameworks instead of just one. Two autonomous frameworks would do more justice to the character of the two specific sets of subject areas and would therefore be a far better tool for the design and implementation of degree programmes,

including quality assurance and enhancement, as well as the recognition of periods of studies, than a single framework.

The Tuning experts in visual arts, theatre, music and architecture proved this point by defining the following profile for their academic fields:

> The Creative and Performing Disciplines encompass a range of fields of an artistic and technical nature in which creativity, interpretation and aesthetic judgment are paramount. These disciplines involve the invention and generation of ideas, forms, images, sounds, structures, performances and texts, which can be used in experimental development to produce new artefacts, spaces, devices, products or processes. The joint concept of a unified sector radiates a stronger focus upon this innovative potential, which is often insufficiently highlighted when considering the constituent disciplines in isolation. The Creative and Performing Disciplines contribute to the experience of life in ways that complement, and have parity with, the contributions of science, technology and philosophy. They have the capacity to persuade, subvert, celebrate and confront traditions; to act as powerful cultural agents; to establish individual aspirations, to help people learn to appreciate differences and to construct coherent value systems. The ideas, methods and priorities of the Creative and Performing Disciplines constitute a distinct network of knowledge, using its own language and procedures, which functions in order to describe, understand and engage in different forms of experience. This network of knowledge also develops distinct notions of artistic and other forms of research, in particular those where visual experience, creating, performing and making form part of the research process itself.[16]

This profile shows clearly the peculiarities of the sector within the much wider domain of the Humanities. The framework itself is described by the experts involved as "a bold attempt to produce a common set of statements about expected achievement levels for students in any and all of the disciplines represented: the visual arts, the performing arts, music and architecture". However, much more important is the breakthrough approach that is developed and applied. Inspired by the expert group of Architecture the sector managed to find a common focus and by doing so set itself apart from other sectors. As core characteristic for the sector was identified "Creation & Creativity", which was supported by seven dimensions which offer further identification/specification. The implication of using a core characteristic and dimensions is twofold: it not only strengthened the identity of the higher arts educational sector in Europe, it also highlighted the innovative potential

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[16] Tuning Europe, *Tuning Sectoral Qualifications Frameworks for the Humanities and the Arts. Final Report 2010 - 2011 [*SQF HUMART Final Report 2010-201*]* (Bilbao: University of Deusto, 2012).

of the sector. This not only underlined the importance of the sectoral approach in terms of recognition of studies, curriculum development and quality assurance and enhancement but also its capability to act as a coordinated force in more political terms.

This approach was also used by the Humanities disciplines to construct their sectoral qualifications framework. For the Humanities for obvious reasons "humanness in culture and society" was identified as its core characteristic or focal point. It was related to 8 dimensions, one more than in the case of the performing and creative disciplines. These dimensions were linked closely to those of the Performing and Creative Disciplines, being a related domain. In the grid below both sets of dimensions are offered. It shows that the central 'values' of each of the sectors are expressed in key terms. Having been drawn up by academics in these sectors, these terms will be recognized by their academic colleagues.

Table 1

SQF Dimensions

Humanities Dimensions	Creative and Performing Disciplines dimensions	Knowledge	Skills	Wider competences
The Human Being	*Making, Performing, Designing, Conceptualising*			
Cultures and Societies	*Re-thinking, Considering and interpreting the Human*			
Texts and Contexts	*Experimenting, innovating & Researching*			
Theories and Concepts	*Theories, Histories and Cultures*			
Interdisciplinarity	*Technical, environmental and Contextual issues*			
Communication	*Communication, Collaboration & Interdisciplinarity*			
Initiative and Creativity	*Initiative & Enterprise*			
Professional Development				

To show how this approach works, the first two dimensions which are typical for each of the two sectors, Creative and Performing Disciplines (CPD) and Humanities (HUM) at level 6 are highlighted.

Table 2
Relation EQF and Tuning SQF dimensional approach

Sector at level 6 EQF	Knowledge	Skills	Competences
EQF	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	— Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts — Take responsibility for managing professional development of individuals and groups
CPD: Making, Performing, Designing, Conceptualising	Have advanced knowledge of the processes and concepts underlying creation and/or performance in their specific discipline	Have the advanced skills necessary to create, realise and express their own creative concepts	Be able to draw upon the knowledge and skills gained within their studies to act and respond creatively in different situations
CPD: Rethinking, Considering and Interpreting the Human	Appreciate how the practice and/or creation generated within their discipline both stems from, and shapes, our humanity	Demonstrate interpretative skill and a reflection of the human dimension in their creative practice	Be able to draw upon experience gained within their studies to operate with an ethical awareness and to encourage the development and foster the well - being of other individuals and groups

Table 2
Relation EQF and Tuning SQF dimensional approach (continued)

Sector at level 6 EQF	Knowledge	Skills	Competences
HUM: The Human Being	Have a critical understanding of the human condition, experience and expression in its various forms and environments	Be able to use disciplinary knowledge to understand and interpret contemporary societal challenges	Be able to understand and respect the individual human in his/her personal, cultural and social dimension
HUM: Culture and Societies	Have knowledge and critical insight into how human behaviours, institutions and modes of expression emerge from and interact with ideas, beliefs and values	Be able to draw on knowledge of the relevant field to identify and define, with guidance, significant problems and areas of enquiry with respect to social and cultural interaction	Be aware of the role of humanities and a humanistic perspective in society, and demonstrate an ethical commitment to their use to achieve social cohesion and sustainability

In both SQFs the EQF definitions of knowledge, skills and (wider) competences have been followed. In the case of (wider) competences the emphasis has not been explicitly put on personal responsibility and autonomy. One feels the tension between the EQF expressions as managing and decision making, which are more operational than the SQF expressions which focus much more on taking social responsibility and offer guidance. It shows how difficult it is to use these descriptors in a one dimensional way.

From the scheme above it can be learned that although the two sectors are related, the expected achievements in terms of learning outcomes can be clearly distinguished. This is even truer when these would be compared to other sectors. It shows the advantages of a systematic approach. It can be observed that a sectoral qualifications framework has a real added value when the following conditions are met:

The SQF is:

— identified by the academics working in the sector as being the core of their sector and academic field
— based on a distinctive profile and dimensions which grasp the core characteristic of the sector and its underlying disciplines
— based on expected levels of achievement / Learning Outcomes which are formulated as stand-alone descriptors
— preferably limited in size to one page for each level
— formulated in such a way that the descriptors are clear, transparent and easy to read
— formulated in such a way that the expected levels of achievement of each discipline covered by the framework can be phrased according to the dimensions identified for the sector

These requirements seem to be met by the two SQF's discussed here. They also allow for learning which has been obtained in an informal or non-formal context. In cases of an interdisciplinary programme it might be necessary to take the two related frameworks into account to position the programme in its academic environment.

A next step should be the alignment of meta-profiles or reference points at subject area level to the related sectoral ones. Architecture, music, visual and performing arts have already gone through that process successfully. One can conclude that this has led to better, more precise, reference points than we had until now. This is of relevance again for external quality reviews and degree programme enhancement.

IX. **Bridging the QF for EHEA and the EQF for LLL**

Both European Meta Qualifications Frameworks are one dimensional. In the case of the QF of EHEA it was built on the descriptors range Knowledge and understanding, Applying Knowledge and understanding, Judgment, Communication and Learning skills. In the case of the EQF for LLL on the descriptors Knowledge, Skills, (Wider) Competences. This is a strength, but also a weakness. The danger is that it simplifies reality and has therefore a limited meaning and value. The basic idea of a Qualifications Framework is that it sets expected levels which should be met, by offering a fair description of the sector/academic field. Therefore, the described SQFs of the Creative and Performing Disciplines and of the Humanities, which are based on dimensions is very promising. Such an SQF seems to do more justice to the particular features of each sector and the subject areas it contains. The reason for this is that such a framework is two dimensional and offers much more possibilities for deepening the features. This in turn offers better opportunities for measuring the expected level of competences / learning outcomes. The beauty of having two axes or legs is that it offers a clear structure, without being mechanic.

However, does it actually offer a reliable and feasible answer to the issue of having two competing frameworks for higher education? It seems it does. To demonstrate this, we take the two SQFs with the identified 7 and 8 dimensions as a starting point. To make it fit, it is required to re-arrange these dimensions slightly. Also an 8th descriptor is added to the SQF for Performing and Creative Disciplines: professional development. This seems to be an element lacking in the original scheme. It is also necessary to move the second descriptor of the QF for the EHEA 'applying knowledge and understanding to the horizontal axis because it equals the EQF descriptor for skills. We use the 2nd cycle descriptors of the QF of EHEA to illustrate the model, which is the outcome of the modifications mentioned. The modifications are minor ones.

Table 3 shows that it is not at all over complicated to order the dimensions of the two Tuning SQFs according to the five descriptors of the QF for the 2nd cycle of the EHEA. As will be noticed the first special feature or dimension which offers the SQF its unique character has been positioned as a separate descriptor, because it stands out from the other ones as a core characteristic which does not fit into the categories used in the QF for EHEA. The other categories can easily be related to this meta-framework. It shows the usefulness of further differentiation in dimensions within the broader QF descriptors. This applies in particular for descriptor 1 - Knowledge and Understanding and descriptor 3 - Judgement.

Table 3
Tuning model to bridge meta-frameworks QF for the EHEA and the EQF for LLL on the basis of the Tuning SQF dimensions approach

QF EHEA 2nd cycle descriptors 1, 3-5	SQF Performing and Creative Disciplines Level 7	SQF Humanities Level 7	EQF descriptor knowledge Level 7	EQF descriptor skills Level 7	EQF descriptor Wider Competences Level 7
			— Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research — critical awareness of knowledge issues in a field and at the inter-face between different fields	— Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields ***QF EHEA 2nd cycle descriptor:*** *2.can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study*	— Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches — Take responsibility for contributing to professional knowledge and practice and/ or for reviewing the strategic performance of teams
Special feature SQF	1. Making, Performing, Designing, Conceptualising	1. The Human Being			

Table 3

Tuning model to bridge meta-frameworks QF for the EHEA and the EQF for LLL on the basis of the Tuning SQF dimensions approach (continued)

QF EHEA 2nd cycle descriptors 1, 3-5	SQF Performing and Creative Disciplines Level 7	SQF Humanities Level 7	EQF descriptor knowledge Level 7	EQF descriptor skills Level 7	EQF descriptor Wider Competences Level 7
1. have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with the first cycle, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context	2. Re-thinking, Considering and interpreting the Human 3. Technical, environmental and Contextual issues	2. Cultures and Societies 3. Texts and Contexts			
3. have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements	4. Theories, Histories and Cultures 5. Experimenting, innovating & Researching 6. Initiative & Enterprise	4. Theories and Concepts 5. Initiative and Creativity 6. Interdisciplinarity			

Table 3
Tuning model to bridge meta-frameworks QF for the EHEA and the EQF for LLL on the basis of the Tuning SQF dimensions approach (continued)

QF EHEA 2nd cycle descriptors 1, 3-5	SQF Performing and Creative Disciplines Level 7	SQF Humanities Level 7	EQF descriptor knowledge Level 7	EQF descriptor skills Level 7	EQF descriptor Wider Competences Level 7
4. can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously	7. Communication, Collaboration & Interdisciplinarity	7. Communication			
5. have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous	8. Professional Development	8. Professional Development			

The result is a table which can be completed for each subject area, which results in a Meta profile for that particular academic field, such as music or linguistics. The profile and table can then be used as a basis for describing each degree programme according to the mission of an institution, department and the particular features in terms of its (tailored) programme learning outcomes.

By using this approach a transparent model is created, which is easy to operate and to understand by admissions and recognitions officers as well as by academics. This can be illustrated by filling in the table at the level of a degree programme. We use for this exercise the renowned Erasmus Mundus Master Course *Euroculture. Europe in the Wider World*. This is an interesting example, because *Euroculture* is not only a multi-dimensional programme, it is also clearly an inter disciplinary one. If the model is appropriate for such a complex programme, one might expect that it can be applied to all degree programmes. Although the programme is related to the sectors of Humanities as well as Social Sciences, its centre of gravity is located in the first sector. Using the Humanities dimensions seems, therefore, to be appropriate. The outcome is presented in table 4.

X. **Conclusion**

It seems fair to conclude that during the last decade tremendous progress has been made in developing instruments, models and tools to accommodate the explosion of student mobility that has flooded Europe and the world.

As has been stipulated this progress is mainly due to the commitment of individual visionaries. Their ideas were institutionalized and supported by formal organizations at both national and international level.

When at the Bologna conference in Berlin the Ministers "encourage the member States to elaborate a framework of comparable and compatible qualifications for their higher education systems, which should seek to describe qualifications in terms of workload, level, learning outcomes, competences and profile" they initiated a fundamental shift from input or staff-centred learning to output or student-centred learning. With this announcement not only governments but also most higher education institutions obtained an assignment with far reaching consequences. Already from 2000-2001 on this process was prepared by the Joint Quality Initiative and the Tuning Projects and confirmed at the Amsterdam Bologna Seminar on Quality which resulted in the Amsterdam consensus. At that conference, the work of government, of quality assurance officials and academics represented in Tuning came together.

Table 4

Programme learning outcomes EMMC Euroculture according to Tuning SQF model of dimensions

QF EHEA 2nd cycle descriptors 1, 3-5	SQF Humanities dimensions Level 7	EQF descriptor knowledge Level 7	EQF descriptor skills Level 7 / QF EHEA 2nd cycle descriptor: 2. can apply their knowledge and understanding…	EQF descriptor Wider Competences Level 7
Special feature degree programme	1. The Human Being	*Deep understanding of European identity/is, civil society/ies, the ongoing European unification process in itself, its cultural and y dynamics and the consequences for its citizens and the wider world*	*Identification and problematisation of what Europe and the EU represents for its citizens and for the wider world*	*Analysis and interpretation of current issues regarding the handling of multicultural society issues into feasible solutions and transferring this knowledge to relevant audiences*
1. have demonstrated knowledge and understanding ….	2. Cultures and Societies 3. Texts and Contexts	— Thorough knowledge and understanding of the phenomena of multiculturalism, national and European identity, current political governance, and evolving social-political processes on the basis of four concepts, namely: Communication, Cooperation, Mobility of Citizens and Active Citizenship; — Thorough (historical) understanding of the European integration process in a global perspective by having studied the most relevant texts in context.	— High level analysing and synthesising competency to identify and problematise issues related to inter-, trans- and multiculturalism; — Be able to locate, select from a variety of sources and manage information required for addressing problems related to key issues as identity/ies and civil society/ies	— Applying theoretical knowledge into practice by offering guidance and workable and acceptable approaches with a high awareness of sensitivity of the issues at stake — Application of appropriate management skills, such as leadership, decision-making, motivation to work effectively in a multicultural / transnational setting;

Table 4

Programme learning outcomes EMMC Euroculture according to Tuning SQF model of dimensions (continued)

QF EHEA 2nd cycle descriptors 1, 3-5	SQF Humanities dimensions Level 7	EQF descriptor knowledge Level 7	EQF descriptor skills Level 7 / QF EHEA 2nd cycle descriptor: 2. can apply their knowledge and understanding…	EQF descriptor Wider Competences Level 7
3. have the ability to integrate knowledge and handle complexity, and formulate judgements …	4. Theories and Concepts 5. Initiative and Creativity 6. Interdisciplinarity	— Thorough knowledge and understanding of theoretical and methodological approaches, in particular comparativism and constructivism, which allow for independent research in the academic field involved; — Experienced knowledge and understanding of different regional and national perceptions of the European integration process from a cultural-social perspective including awareness of the push and pull factors in the process of European identity formation and in relation to third countries; — High level of sensitiveness based on knowledge and insight regarding cultural-social differences and comparabilities at group, local, regional, national, European and global level	— Making judgements by integrating complex and (conflicting and insufficient) data with the intention to identify rational and sustainable solutions for identified problems; — Identify topics in the public debate in a reflexive way and with an eye for social-cultural sensitive matters; — Independent preparation and writing of project applications by identifying the project's contribution to existing knowledge and experience, the most effective approach to and structure of it, cost effectiveness, and the relevant audiences/project beneficiaries.	— Planning, designing and managing complicated medium-term (research) projects in a transnational and multicultural environment successfully; — Capability for self-analysis, that is the ability to accept and give critical constructive feedback, on the basis of a well-developed awareness of one's own identity and related norms and values; — Identifying a suitable work placement, outline a work plan for it and participate in placement successfully (for professional track only)

Table 4

Programme learning outcomes EMMC Euroculture according to Tuning SQF model of dimensions (continued)

QF EHEA 2nd cycle descriptors 1, 3-5	SQF Humanities dimensions Level 7	EQF descriptor knowledge Level 7	EQF descriptor skills Level 7 / QF EHEA 2nd cycle descriptor: 2.can apply their knowledge and understanding…	EQF descriptor Wider Competences Level 7
4. can communicate …	7. Communication	— Performing and presentation of the outcomes (in oral and written form) of independent research by making efficient use of primary and secondary sources (e.g. libraries, computerised material, bibliographical material).	— Communication and transfer of politicised and sensitive information in oral and written form to different types of addressees/audiences in one's native, and (at least) one second language besides English at near native level	— Participating in group work productively and taking the lead on occasion, presiding over debates and discussions in an international / multicultural group
5. have the learning skills …..	8. Professional Development	— Have knowledge of one's personal strengths and weaknesses and of the abilities and learning methods necessary for the chosen profession or range of professions	— Be able to apply different methods and strategies of study to different tasks and to undertake independent study	— Capability to learn from and respond accurately to unexpected developments, taking these into account to accommodate and develop suitable strategies accordingly

The Copenhagen Bologna seminar, which took place one year later, confirmed that frameworks and reference points would be an absolute necessity for developing a European Higher Education Area. The previous fifteen years had showed us that ETCS in its existing stage of being mainly a transfer system would be insufficient. In practice the unreliable mechanism of course-to-course comparison instead of comparing periods of study measured in ECTS credits was still widely used.

Therefore the central question posed in this article - whether qualifications frameworks, sectoral profiles or frameworks as well as degree programme profiles or reference points are indispensable instruments for national and international higher education in the world of today - can only be answered positively. Output-based learning can simply not work without clear reference points. It is a cause for praise that in the Bergen Communiqué (2005) the QF for EHEA based on work of the JQI which has resulted in the Dublin Descriptors, was endorsed. The European Commission deserves the same praise for the development of the EQF for LLL, which was agreed three years later by the Council of Ministers and the European Parliament. However, at the same time, it needs underlining that both meta-frameworks were developed by 'officials', not academics. It is therefore no surprise that both frameworks did not land or landed very slowly in the academic world. If accepted this was mainly due to the fact that it was built according to the quality assurance and accreditation criteria.

During the same years Tuning and Thematic networks developed their reference points for individual subject areas. This was a successful process - the documents produced were well received —, but its application was very variable which was mainly due to the fact that it was left to the individual projects to distribute their results. This has proven to be a strategic mistake. Although since the Leuven Communiqué the ministers and their officials asked explicitly for the support of the higher education institutions, they have so far shown no serious interest in what has been developed as international mechanisms by the higher education sector to implement the outcomes based approach. This has clearly backfired on the Bologna Process as such. It has simply not been understood that degree programme reforms do not only require references at a meta-level, but most at all at the level of the individual subject area and the sector in which they have been positioned.

However, it is not too late. It has not been helpful that higher education institutions have had to deal with two competing European Qualifications frameworks - for more than 5 years now - frameworks which are not fully compatible. The development of Tuning sectoral frameworks based on dimensions seems to be a breakthrough. They not only bridge the two European meta-frameworks but also the meta-profiles / reference points at

subject area level. The two sectoral frameworks or profiles developed so far offer the necessary precision which is required for degree programme design, delivery, quality assurance and enhancement and the recognition of degrees and periods of studies. Compatible frameworks should be rapidly developed for all other sectors. This might be the Columbus' Egg for which academic institutions and their academics have been looking: a simple, transparent instrument which is owned and used by all involved in the modernization of higher education in Europe and the world.

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A Model for the Regionalization of Higher Education: The Role and Contribution of Tuning[1]

Jane Knight

Abstract: A notable evolution in the internationalization of higher education in the last decade has been the increasing emphasis on regional level collaboration and reform initiatives. The purpose of this paper is to examine the process of regionalization through the lens of a conceptual model and to demonstrate how different Tuning initiatives serve as useful instruments in the application of the model, and the ultimate realization of higher education regionalization. The evolving nature and meaning of region and regionalization are explored in the first section of the paper. This leads to an analysis and conceptual mapping of the many terms used to describe the phenomenon. The proposed model is based on three distinct but complementary approaches; Functional, Organizational and Political Approaches (FOPA). The three approaches are inter-related. The model is generic in concept and purpose so that it can apply to the evolving process of higher education regionalization in different parts of the world. The article examines how the initiatives and implications of the Tuning process are directly related to the model and consequently make important contributions to the regionalization of higher education in all regions of the world.

Keywords: Regionalization; system alignment; curriculum convergence; credit systems; qualification frameworks; organizational; functional; political; African Union; Latin America; Bologna; Europe; Central Asia.

I. Introduction: Importance and expansion of higher education regionalization

A notable evolution in the internationalization of higher education in the last decade has been the increasing emphasis on regional level collaboration and reform initiatives.[2] The growing number of regional based university

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[1] Parts of this paper are based on: Knight, "A Conceptual Framework for the Regionalization of Higher Education: Application to Asia," and Knight, "Towards African Higher Education Regionalization and Harmonization: Functional, Organizational and Political Approaches," in *The Development of Higher Education in Africa: Prospects and Challenges*, edited by Alexander W. Wiseman and C. Wolhuter. International Perspectives on Education and Society Series (UK: Emerald Publishing, 2013).

[2] Jane Knight, *Higher Education in Turmoil: The Changing World of Internationalization*, Global Perspectives on Higher Education, V. 13 (Rotterdam: Sense Publishers, 2008).

networks, regional student mobility programs, and pan-regional higher education associations are only a few examples. More significant is the development of regional level frameworks for academic credit systems, quality assurance, and qualifications frameworks as these reforms are based on a closer alignment of systems and policies. The Bologna Process in Europe is the most significant illustration of this regional level of reform. Supporters and critics of the Bologna process, both internal and external to Europe, agree that it continues to be the boldest and largest planned effort to enhance regionalization of higher education in the world.[3] Opinions differ on the driving rationales, long-term outcomes, unintended consequences, and next steps of the Bologna process. But, there is no question that it has propelled other regions and sub-regions around the world to look more seriously at the significance and modality of building closer alignment of their higher education systems.

A review of recent initiatives in Africa, Asia and Latin America demonstrate the importance attributed to higher education realization. For example, in 2007 the African Union released a major report "Harmonization of Higher Education Programmes in Africa: A Strategy for the African Union" which focused on building closer links among higher education institutions, networks, national systems, regional university associations and other key higher education actors.[4] An interesting feature of creating a pan-African higher education and research space is the emphasis on strengthening the capacity and role of regional university associations.[5] Examples of current African higher education regionalization initiatives include the African Quality Rating Mechanism, the Nyerere African Scholarship scheme, AfriQAN- network of quality assurance agencies, regional centres of excellence, updated Regional UNESCO Arusha Convention on the Recognition of Qualifications, a Pan-African University, and the new Open Education Africa project. Regional level initiatives to facilitate the establishment and alignment of quality assurance and accreditation systems, student mobility schemes, common degree levels, a research/education ICT backbone, and research networks are in now in progress. These initiatives

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[3] Christian Tauch, "The Bologna Process: State of Implementation and External Dimension," in *Opening up to the Wider World: The External Dimension of the Bologna Process*, edited by F. Muche. ACA Papers on International Cooperation in Education, 23-29 (Bonn: Lemmens, 2005).

[4] African Union, "Harmonization of Higher Education Programmes in Africa: A Strategy for the African Union: Summary Report," Addis Ababa: Meeting of the Bureau of the Conference of Ministers of Education of the African Union (COMEDAF II+), African Union, 2007.

[5] Yohannes Woldetensai, *Regional Harmonization of Higher Education for Africa: Background Document* (Accra: Association of African Universities, 2009).

illustrate the intention and commitment of Africa to establish stronger pan regional collaboration and harmonization of systems while still recognizing the importance of bilateral and multi-lateral internationalization efforts.[6]

The higher education regionalization scenario in Asia is complex and evolving. To date, most efforts towards enhancing higher education regionalization have been within South East Asia, but not exclusively. For instance, the Asia Pacific Quality Assurance Network was established in 2004 and covers 53 countries in Asia. Among its goals is capacity building within nations to establish national quality assurance systems and greater mutual recognition and collaboration among member countries. The University Mobility in Asia Pacific program (UMAP) is a student mobility project which was established over fifteen years ago. The Association of South East Asia Nations (ASEAN) decided in 2003 to embark on a program of strengthening relations and activities among higher education institutions through the establishment of the ASEAN University Network (AUN) which is comprised of 26 leading universities in South East Asia. The AUN in turn has developed a series of thematic networks and projects which primarily involve member institutions but is yielding to pressure to include other universities in their regional conferences and projects.

Another key player in Asia higher education scene is the South East Ministers of Education Organization (SEAMEO). It has established a series of 22 centres throughout the region which deal with specific aspects of education. The Regional Centre for Higher Education Development (RIHED) has undertaken an impressive number and diversity of projects to create a stronger frame of collaboration among the 11 member countries of South East Asia. Examples of initiatives undertaken include the ASEAN Quality Assurance Network, the ASEAN regional research citation index, the ASEAN regional credit transfer system, and the ASEAN Higher Education Clusters.[7] Many of these schemes are in early stages of development and will take time to mature and be sustainable. Interestingly countries outside of South East Asia are starting to be included in these projects. For instance Japan has recently joined the MIT (Malaysia, Indonesia, Thailand) Student Mobility Scheme organized by RIHED.[8]

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[6] Sarah Hoosen et al., "Harmonization of Higher Education Programmes: A Strategy for the African Union," *African Integration Review* 3, no. 1 (2009): 1-36.

[7] R Aphijanyathan, "A Research Report on East Asian Internationalization of Higher Education: A Key to Regional Integration," Program Report 24, Bangkok: Regional Centre for Higher Education and Development, South East Ministers of Education Organization, 2010.

[8] Supachai Yavaprabhas, "Experiences of Asian Higher Education Frameworks and Their Implication for the Future," GIARI Working Paper 2008-E.19, Tokyo: Waseda University, 2009.

Campus Asia, a program created in 2010, is the most recent project to build closer ties among Korea, Japan and China through student mobility and quality assurance. Campus Asia is a result of the second Tri-lateral East Asia Summit held in 2009. This mobility scheme is still working out the complexities of quality assurance mechanisms, credit systems, and the controversial but central issue of language. Although it is currently focused on mobility for students in Korea, China and Japan, it hopes to expand and include students from other East Asian nations.

In Latin America and the Caribbean (LAC) a major new initiative for the regionalization of higher education has been established as result of a region wide UNESCO conference held in 2008. The name of the initiative is ENLACES which, in English, means the Latin America and the Caribbean Area for Higher Education. This project is hosted by IESALC- the UNESCO Institute for Higher Education in Latin America and the Caribbean. ENLACES is a regional platform formally created for the mobilization of projects and studies that support academic cooperation and knowledge sharing in the region. Membership in this initiative is open to individuals, institutions, government bodies, organizations and networks in all LAC countries. The ultimate goal is to promote improved quality and relevance of higher education so that it can better serve society.

A major activity is the development of a Map of Higher Education in LAC. This project brings together data on national higher education systems in order to facilitate academic mobility and the development/alignment of national and institutional policies. For example, there is a strong commitment to facilitate the convergence of national and sub-regional assessment and accreditation systems with the involvement of the IberoAmerican Network for the Accreditation and Quality of Higher Education (RIACES). Two other priorities are the mutual recognition of studies, titles, and diplomas based on quality assurance, as well as the establishment of common academic credit systems accepted throughout the region. Fostering the intra-regional mobility of students, researchers, faculty, and administrative staff through the implementation of funded programs is another area of activity. The establishment of multi-university and multi-disciplinary teaching and research networks is part of the work plan, as is developing shared distance education programmes within the region. Finally, strengthening the learning of languages present in the region to foster the kind of regional integration that incorporates cultural diversity and multilingualism is a primary concern and modality for building the common higher education area in LAC.

These brief descriptions illustrate the diversity of actors and projects which are contributing to the regionalization of higher education in three regions of the world. Some activities are well established programs while

others have only been introduced in the last few years. At the same time, inter-regional cooperation is expanding as well. In fact, Europe is investing considerable efforts and funds into promoting the Bologna reforms to other parts of the world through establishing inter-regional mobility programs, policy dialogues, and institutional network projects. Interestingly, a number of these efforts are in fact bilateral initiatives i.e., between Europe as a region to a single country or sub-region. This is due to the fact that regional level higher education agencies or frameworks do not exist in other regions as they do in Europe. There is no doubt that Europe is a catalyst and model for regionalization initiatives. Other regions are benefiting from the Bologna Process, but they are giving careful consideration on how to adapt the European experiences to their own stage of development, their own cultural, historical and political contexts, and most importantly their own reasons for promoting regionalization. There is awareness of the subtle but evident soft power agenda of Europe's significant investment in promoting Bologna reforms and closer inter-regional cooperation.

II. Tuning project and process

The Tuning Project is an interesting and successful initiative which has addressed the reform of institutional level structures through curriculum convergence but which has important implications for the regionalization of higher education at sub-regional and regional levels.

In 2000, the first Tuning Project was launched in Europe at the same time that the Bologna process of higher educational reform was underway. The focus of the project was the 'elaboration of a framework of comparable and compatible qualifications' in each of the (potential) signatory countries of the Bologna process. The aim was to develop a common understanding of qualifications described in terms of workload, level, learning outcomes, competences and profile. In turn this could lead to the eventual creation of a European wide Qualifications Framework.[9] In the 13 years since its launch, Tuning has expanded from its original European focus to other regions and countries of the world and more importantly, it has evolved into a respected *'process' of reforming education structures at the institutional level by developing common reference points for subjects, program profiles and now meta profiles.*

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[9] Julia González, and Robert Wagenaar, "Universities' Contribution to the Bologna Process. An Introduction," University of Deusto, 2008, http://www.unideusto.org/tuningeu/images/stories/Publications/ENGLISH_BROCHURE_FOR_WEBSITE.pdf. 19 January 2013.

Because the Tuning approach has worked on common understandings and reference points leading to comparable and compatible qualifications within and among countries, it has significant implications for the regionalization agenda of higher education. The work of Tuning in Latin America is a good example of this. As a result of two major Tuning Projects in Latin America, from 2004-2007 and 2011 to 2013, progress has been made toward achieving a significant level of convergence across Latin American in fifteen subject areas, a workload based credit system for use across the region, and a regional network of national Tuning Centres to facilitate learning outcome based teaching, learning, and evaluation strategies.[10] Furthermore, according to the Central American Council of Universities (CSUCA) which has been active in these projects, the work of Tuning has contributed to the process of academic harmonization for the improvement and integration of a regional higher education system in Central America.[11]

In 2012, a Tuning Africa initiative was launched with the express purpose of contributing to the realization of the *African Union Strategy* for *Harmonization* of *Higher Education Programmes (AU-HEP)*.[12] The AU-HEP aims to increase cooperation in information exchange, harmonization of procedures and policies, and attainment of comparability among qualifications to facilitate professional mobility for both employment and further study. The work of the African Tuning initiative is intended to contribute to the African Union Harmonization strategy and help to foster mobility of students in Africa through a qualifications recognition scheme and a regional academic credit system; enhance the quality of education and employability through a learning outcome based approach to curriculum development, and contribute to the harmonization of education structures and systems across the continent.[13] Similarly in Central Asia, a new Tuning project is designed to contribute to building a Central American Higher Education Area (CAHEA) through the development of competency based profiles for a range of subject areas which will eventually help to establish comparable qualification profiles as the basis for a Central American Qualifications

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[10] Tuning Latin America Project (Tuning Latin America), "Objectives Tuning Latin America," 2011, http://www.tuningal.org/en/tuning-project/objetives. 18 January 2013.

[11] Francisco Alarcon, "Vinculando Tuning a las Políticas Nacionales, Subregionales y Regionales: La Experiencia de América Central," Presentation of 4th Tuning Project Meeting in Brussels, Tuning America Latina, 2012, http://www.tuningal.org/es/publicaciones/cat_view/44-presentaciones-reunion-bruselas-19-22-nov-2012. 19 January 2013.

[12] African Union, "Harmonization of Higher Education Programmes in Africa."

[13] Beatrice Njenga, "Tuning Approach for Harmonisation of Higher Education in Africa," Presentation at 4th Tuning Project Meeting in Brussels, Tuning Latin America, 2012, http://www.tuningal.org/es/publicaciones/cat_view/44-presentaciones-reunion-bruselas-19-22-nov-2012. 19 January 2012.

Framework and a credit system.[14] These concrete examples demonstrate the growing importance of higher education regionalization in all continents and the contribution that the Tuning process can make to these regionalization efforts.

III. **Purpose and outline of paper**

The purpose of this paper is to examine the process of regionalization through the lens of a conceptual model and to demonstrate how different Tuning initiatives serve as useful instruments in the application of the model and the ultimate realization of higher education regionalization.

The outline of the article is as follows: The first section explores the meaning of regions and regionalization and identifies four lines of inquiry which in turn leads to an analysis of the myriad of terms used to describe regionalization. The key concepts are mapped on a continuum which is anchored by the notions of cooperation and collaboration at one end moving to more formalized and intentional concept of integration and interdependence at the other end. The next section introduces a conceptual model for the regionalization of higher education. The model is based on three distinct but complementary approaches; Functional, Organizational and Political Approaches (FOPA). The three approaches are inter-related; they are not independent silos of activities. The model is generic in concept and purpose so that it can apply to the evolving processes of higher education regionalization in different parts of the world. Examples of different types of initiatives are provided to elucidate the FOPA framework and illustrate the relationship among the three approaches. The final section looks at how the initiatives and implications of the Tuning process are related to the model and consequently make important contributions to the regionalization of higher education in its many diverse forms in all regions of the world.

The tripartite FOPA model is a work in progress. It needs to be generic enough to encompass different approaches but specific enough to be useful for empirical analysis and comparison. Higher education is the main focus, but the model has relevance to the broader tertiary education sector. The model concentrates on the process of facilitating closer collaboration and alignment among higher education institutions, actors, networks and systems within a designated area or framework. Furthermore, the model builds on the

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[14] Robert Wagenaar, "Tuning Educational Structures around the World. An Overview of the Developments in Different Regions," Presentation at 4th Tuning Project Meeting in Brussels, Tuning Latin America, 2012, http://www.tuningal.org/es/publicaciones/cat_view/44-presentaciones-reunion-bruselas-19-22-nov-2012. 19 January 2013.

multitude of activities, reforms, and networks that are already functioning and improving higher education and its contribution to society.

IV. **Understanding Regions and Regionalization**

A review of the terminology related to the concept of region is like opening Pandora's Box. As regions evolve and change so does the interpretation and use of key terms. The diversity of disciplines examining the topic of regionality brings a different lens to the discourse and vividly illustrates that the concept of region is both complex and elusive. A myriad of definitions and interpretations exist.

Traditionally region has been defined in geographic terms and primarily as a collection of nation states in a particular geographically designated area.[15] Due to the more interconnected and interdependent world in which we live, the idea of region is becoming more elastic and porous. In both theory and practice, regions can be overlapping, multi-layered, multi-actor, and multi-faceted and can be politically, socially, functionally, and culturally defined.[16] Regions can be sub-national and supra-national. The supra-national level is the focus of this paper but this level is also layered as it can include sub-regional, regional and pan- regional levels. Nation state is no longer always at the core of region, especially for culturally based regions. Regions do not need to be based on boundaries anymore; the connections and interactions among key actors are of greater import than the defining perimeter. The focus is on the dynamic processes of building a region. Thus, the model is intended to be applicable to higher education regionalization in any region; however it is delineated by the user. It could be in geographic terms such as major world regions Africa, Europe,[17] Latin America, or smaller regions such as South East Asia,[18] Eastern Europe,[19] Sub-Saharan

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[15] Raimo Vayrynen, "Regionalism: Old and New," *International Studies Review* 5, no. 1 (2003): 25-51.

[16] Björn Hettne, "Beyond the New Regionalism," *New Political Economy* 10, no. 4 (2005): 543-71.

[17] Susan Robertson, "Europe/Asia Regionalism, Higher Education and the Productions of World Order," *Policy Futures in Education* 6, no. 6 (2008): 718-29.

[18] Kazuo Kuroda, and D. Passarelli, eds., *Higher Education and Asian Regional Integration Symposium Report* (Tokyo: Global Institute for Asian Regional Integration, Waseda University, 2009).

[19] Adriana Gorga, "Where Are We with the Harmonization of European Higher Education? The Case of Central and East European Countries," *European Education* 39, no. 4 (2008): 58-68

Africa, or cultural/linguistic terms such as Francophone Africa or Arab States, or in political/economic terms such as Asia Pacific Economic Community or Mercosur.[20]

A review of academic articles and grey literature reveals a vibrant debate on the topic of regions and their importance, formation and function. It is interesting to note the different interpretations and permutations of the concept of region. Frequently used terms include regionalism, regionalness, regionality, regionalization, regional integration, inter-regional cooperation… to name a few. An examination of how these terms relate to the higher education sector leads to four lines of inquiry: 1) the impact of regionalism on higher education; 2) higher education regionalization 3) higher education as an instrument for regional integration and 4) inter-regional cooperation in higher education.

The 'impact of *regionalism* on higher education' focuses on how the changing notion and increasing importance of region is affecting higher education. It can lead to a type of trend analysis study where higher education is seen in more of a reactive position to the increasingly significant influence of the ideology of regionalism. *'Higher education regionalization'* introduces the process of intentionally building connections and relationships among higher education actors, structure and systems within a region. Regionalization attributes more of a proactive role and 'agency' to higher education. *'Higher education as a tool for regional integration'* takes a more tactical approach to how higher education can be used to achieve regional integration. Given the importance of the knowledge economy, higher education is perceived as a tool for the overall goal of regional economic integration. Higher education can be seen as a means to an end and the end is often stated in political and/or economic integration terms. *Inter-regional cooperation in higher education* introduces yet another direction of inquiry which involves interactions between two regions. It often means two world regions such as Asia and Europe, although it could also be regions of smaller scale. Inter-regional cooperation is clearly different from intra-regional cooperation, with the pivotal point being how region is defined.

All lines of inquiry merit further examination but this paper focuses on the second line of inquiry 'higher education regionalization'. For the purposes of this discussion regionalization of higher education is defined as the 'process of building closer collaboration and alignment among higher education actors and systems within a defined area or framework called a

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[20] R. Robledo, and A. Caillon, "Regional Processes in Higher Education. The University Course Accreditation Mechanisms in the Mercosur and Regional Recognition of Diplomas and the Quality of Training," *Journal of Higher Education and Society* 14, no. 1 (2009): 73-98.

region".[21] Three points are key to this definition. The first is the idea that it is an on-going and evolutionary process, the second is the notion of intentional region building based on existing and new relationships and activities by a diversity of actors, and third is the view that region is defined by the players involved and can be interpreted as an specific area or an organizational/ programmatic/ political framework.

V. **Conceptual mapping of regionalization terms**

The analysis of the 'process of higher education regionalization' involves a multitude of terms such as collaboration, harmonization and integration. At times, the terms are used interchangeably, and at other times they have very different meanings. While this confusion of terms is not unusual with new developments, it does lead to misunderstandings and muddles. The terms and concepts that are most commonly linked to regionalization include the following: cooperation, integration, harmonization, convergence, collaboration, community, coherence, partnership, and alignment. Worth noting is the number of words that start with 'co' indicating the notion of 'togetherness'. The similarity among these terms is striking but when studied more closely subtle and important differences emerge. The next section focuses on the conceptual mapping of these terms, their meaning, and their relation to one another.

It is both challenging and enlightening to discern the differences and similarities among these terms and then try to group and map them. This could be criticized as a rather subjective and normative exercise, but the purpose is to stimulate reflection and raise questions. The categorization of terms is highly influenced by the language of analysis. What these terms mean in English will probably differ from how they are used in Japanese, Spanish or Arabic. Thus, it is important to ask what is the principle factor for grouping the terms and secondly, what does movement along the continuum or scale represent. In short, the groups include terms of similar levels of intensity of activity and the continuum represents the degree of intended 'togetherness' or what is often labelled 'regionalness'.[22]

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[21] Jane Knight, "A Conceptual Framework for the Regionalization of Higher Education: Application to Asia," in *Higher Education Regionalization in Asia Pacific. Implications for Governance, Citizenship and University Transformation*, edited by John N. Hawkins, Ka Ho Mok, and Deane E. Neubauer (London: Palgrave Macmillan, 2012).

[22] Takashi Terada, "Constructing an 'East Asian' Concept and Growing Regional Identity; from EAEC to ASEAN +3," *The Pacific Review* 16, no. 22 (2003): 51-277.

The continuum is anchored by the concepts of cooperation at one end and integration at the other. Cooperation represents a fairly loose and open kind of relationship while integration denotes a much stronger cohesion and collective type of arrangement often referred to as a community or 'common area'. The risk of placing these terms on a continuum is that regionalization is understood to be a linear progression along this scale. This is definitely not the case as change rarely happens in such a systematic way. Most importantly, the objectives and anticipated outcomes of regionalization differ among regions and for various regionalization strategies. One region may be working towards alignment and collaboration rather than harmonization and convergence while other regions may make integration the ultimate goal. An effective way to look at this continuum is through a musical metaphor. The collaboration and partnership group can be likened to an informal jazz concert where musicians gather to play the same composition with individual interpretations while the harmonization and integration end can be compared to a professional orchestral performance where different musicians are playing the same musical composition under a single conductor and common interpretation of the music.[23]

| Cooperation | Co-ordination | Convergence | Integration |
| Collaboration | Coherence | Harmonization | Community |
| Partnership | Alignment | | Interdependence |
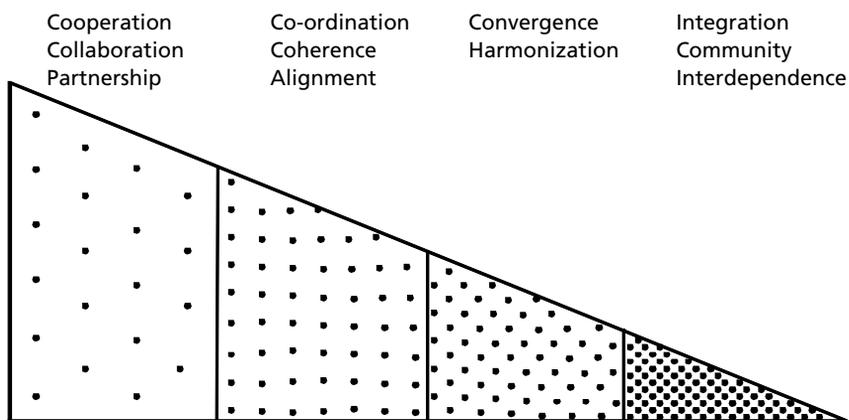
Figure 1
Mapping of Higher Education Regionalization Terms[24].

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[23] Supachai Yavaprabhas, "Regional Harmonization of Higher Education in Asean," a paper presented at the 2010 Global Higher Education Forum, Penang, 2010.

[24] Knight, "A Conceptual Framework for the Regionalization of Higher Education: Application to Asia".

Figure one presents a schematic diagram of the conceptual mapping. The first group includes cooperation, collaboration and partnership. Networking could be added to this list. These terms denote an open, voluntary and perhaps informal type of relationship among actors. In practical terms, it describes the multitude of bilateral and multilateral collaborative activities by universities and other higher education actors.

The second group of terms- coordination, coherence and alignment- introduces an element of organization and most likely some adaptation to ensure that the interactions among higher education actors in the region are complementary, productive and bring added value. In practice, this would include the organized networks, joint education programs, or research partnerships among higher education institutions, structures and systems.

The third group of terms- harmonization and convergence- involves stronger and more strategic links and can involve systemic changes both at institutional and national levels. This can include the development of regional quality assurance schemes; an academic credit system with a common currency for determination of credit based on workload; a qualifications framework, regional citation index; or compatible academic calendars.

The fourth group of terms- integration and community or common area- represents more formalized, institutionalized and comprehensive levels of connection and relationships. In practice this would involve regional level agreements and bodies that aim to facilitate a more robust and sustainable type of regional work and influence such as 'a common higher education and research space.' It is important to emphasize that this is a mapping of concepts not a depiction of the phases of the regionalization process.

It is equally interesting to look at concepts which are intentionally not included in this conceptual mapping but which are used and appear in the literature. Terms such as standardization, conformity, uniformity, compliance, and homogenization are omitted because they do not acknowledge the important differences among systems and actors within a region. This underlines a fundamental value or tenet of higher education regionalization which is respect for and recognition of differences and diversity among key actors, systems, and stakeholders. Failure to recognize this diversity can lead to the "zipper effect" whereby being completely interlocked can neglect differences, stifle innovation, and lead to homogenization.

A review of the Tuning documents and reports reveals that it uses many of the same terms when trying to describe both the goals of the project and the Tuning process. Terms which are central to Tuning and most commonly

used include reference points, convergence and common understanding. According to the founders of the Tuning Project, convergence as defined in the Tuning project involves "the voluntary recognition and adoption of general policies for the achievement of common goals."[25] Key concepts in this definition are *voluntary recognition and adoption of general policies* which interestingly relate closely to the third group on the continuum. The Tuning leaders carefully state that "the name Tuning is chosen for the *Process* to reflect the idea that universities do not and should not look for uniformity in their degree programmes or any sort of unified, prescriptive or definitive … curricula but simply look for points of references, convergence and common understanding".[26] This is clearly and emphatically enunciated to address criticisms that Tuning is a standardizing exercise and contributes to the aforementioned zipper effect which ignores differences and individual contexts. Common understandings and references points recognize and respect both differences and commonalities. Convergence represents a rather stringent level of 'togetherness" but is softened by the notion of voluntary. However, when national and regional policies are developed, voluntary adoption is often not the preferred option.

Regionalization can be understood as an intentional process, a desire to build on what is already happening within the region and move beyond an ad hoc situation of cooperation to a more planned approach. Tuning is a process which appears to both stimulate and build on collaborations in a strategic and hopefully sustainable way.

VI. The Functional, Organizational and Political Approaches (FOPA) Model

Three inter-related approaches- the functional approach, the organizational approach and the political approach - constitute the core of the proposed model. These approaches are not mutually exclusive. They are not three separate silos; they work in unison complementing and reinforcing each other. While this is the optimal situation it does not always happen in practice because conflicting priorities or politics can cause tension among the three approaches. At any one time, one approach could be more dominant than another; but, ultimately there needs to be progress on all three to ensure sustainability. Figure Two illustrates the relationship and intersection of these three approaches.

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[25] González and Wagenaar, "Universities' Contribution to the Bologna Process," 148.

[26] Ibid., 5
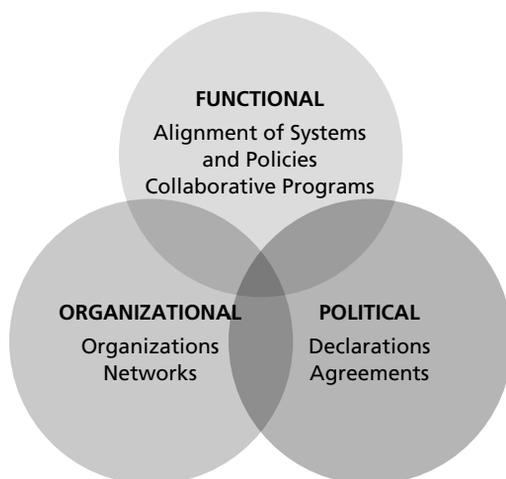
Figure 2
Relationship among 3 Approaches[27].

The first approach takes a *functional* perspective of regionalization and focuses on the practical activities of higher education institutions and systems. Functional approach initiatives can be put into two distinct groups. The first group relate to strategies which facilitate closer alignment or in some cases harmonization among national/sub regional higher education systems. The second category includes programs like student mobility schemes, cross-border collaborative education programs, pan-regional universities and centres of excellence. The relationship between these two groups is critical as the systems/policies in group one are needed to facilitate and expedite the programs in group two. For instance, compatibility among quality assurance systems and academic credit systems will help student mobility programs within a region. Generally, it is a more complex and serious undertaking to align national systems within a region than to establish multi-lateral academic activities.

The second approach refers to the *organizational* architecture that evolves to develop and guide the regionalization initiatives in a more systematic (although some might call bureaucratic) manner. It is labelled organizational approach because frameworks, structures, agencies are

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[27] Knight, "A Conceptual Framework for the Regionalization of Higher Education: Application to Asia".

necessary to help establish and oversee regional level and intra-regional initiatives. A diversity of networks and organizations are emerging which include government and non-government bodies, professional organizations, foundations, and networks. These entities assume a variety of responsibilities — policy-making, funding, research, capacity building, regulation, and advocacy among others. Figure Three presents generic examples of each of the three approaches.

Approach	Generic Examples
Functional	*Alignment of Higher Education Systems* Quality assurance and accreditation Academic credit system Degree levels and structures Recognition of qualifications and titles Academic calendar — years and semesters Qualification frameworks ITC platforms Research citation index Inter-library loan systems *Collaborative Academic Programs* Academic mobility schemes- students, professors, scholars Research networks, clusters, and projects Cross-border programs- double, joint, twining, branch campus Regional centres of excellence Institutional agreements- bilateral and multilateral OER and ODL Pan-regional university
Organizational	*Organizational Architecture* Networks and Organizations Foundations Governmental/non-governmental agencies Frameworks Levels: pan-regional, regional, sub-regional
Political	*Political will* Declarations Agreements/ Conventions/Treaties Summits/Task Forces/ Dialogues

Figure 3
FOPA Model - Generic examples[28].

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[28] Knight, "A Conceptual Framework for the Regionalization of Higher Education: Application to Asia".

The third approach involves the *political* will and strategies that put higher education initiatives on the agenda of decision making bodies. The political approach helps to launch major programs or funding schemes and to formalize initiatives. Declarations of intent, binding conventions, treaties, agreements, and special meetings like summits or policy dialogues are instruments for generating political support and visibility in order to make regionalization of higher education a priority. This approach can be characterized has having more of a top down, formal and intentional orientation.

VII. **Tuning Contributions**

The purpose of this section is to show how Tuning initiatives are directly linked to and contribute to the activities included in the FOPA (see Figure Three). Concrete examples from existing Tuning Projects are used as illustrations.

A clearly stated anticipated outcome for the Latin America Tuning Project is its contribution to creating a Higher Education Area in Latin America. This is realized through curriculum convergence via the development of common reference points for subject profiles and disciplinary frameworks. This, in turn, will lead to more collaboration among academics in curriculum development, joint supervision of research, student mobility and qualifications recognition. Another concrete initiative is the proposed regional system of academic credits based on student workload and learning outcomes, an initiative which started with Tuning's work in Latin America in 2004. These are examples of initiatives to help with the convergence of academic structures at the institutional level and alignment of academic systems at the regional level.[29]

In terms of the organizational architecture necessary for closer regional collaboration in Latin America, Tuning has developed a network of university managers through the National Tuning centres which provide support and build a favourable political context for the universities to work on competency based learning. Furthermore, the Tuning project is partnering with national and regional university associations, quality assurance and accreditation agencies and national government across the region. These groups, along with the universities are key actors to ensure sustainability of the Tuning process and for the regionalization of higher education.

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[29] Tuning Latin America Project (Tuning Latin America), "Objectives Tuning Latin America," 2011, http://www.tuningal.org/en/tuning-project/objetives. 18 January 2013.

In Central Asia, where a relatively new Tuning project is in progress, the intention is to develop competency based profiles at the subject level which can serve as the foundation for the eventual development of a Central Asia Qualifications Framework and a regional credit system.[30] Both the qualification framework and regional academic credit system are key strategies in the FOPA model and fundamental building blocks in for the ultimate goal of creating a Central Asian Higher Education Area.

The African situation is very interesting. Tuning Africa is collaborating with the African Union (AU) to help achieve its Higher Education Harmonization Strategy. One of the key objectives of the AU strategy is to create more student and professional mobility within Africa. To accomplish this goal a regional/sub-regional academic credit systems and a qualification framework are pre-requisites. Furthermore, to enhance the quality of higher education in Africa more attention is being paid to competency-based learning outcomes. Tuning project participants are contributing by identifying a set of common reference points for competencies and professional profiles in five thematic/subject areas. Of special note is the priority to address the application of the Tuning process to distance education in Africa.[31]

The FOPA model focuses on organizational architecture that is necessary to stimulate and sustain regionalization efforts. The Tuning process is creating its own regional networks but more importantly it is working collaboratively with existing regional bodies such as the African Union and sub-regional bodies such as the Central American Council of Universities, both of which are critical actors in the higher education regionalization agenda in their respective regions. In Europe, Tuning is working with and the European Commission to further higher education reform and regionalization within Europe and especially in other countries and regions of the world.

Important to note is that Tuning is also working at the country level, for example China, Japan, USA, Thailand, Russia. It will be interesting to follow the developments at a national level to see if and how they may eventually contribute to the regionalization of higher education.

To date, Tuning initiatives have contributed significantly to the functional aspects of regionalization especially with respect to qualification frameworks, subject/disciplinary profiles and academic credit systems. These issues usually require some level of structure and system alignment within and among countries within a region. These particular reforms in turn facilitate

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[30] Wagenaar, "Tuning Educational Structures around the World".

[31] Tuning Africa, "Feasibility Study into the Relevance of a Tuning Approach for Higher Education in Africa. Final Report," 2011, http://www.tuningafrica.org/documentos/Final_report_EDITADO_VERSION_FINAL_30062011.pdf. 21 January 2013.

program level initiatives such as increased student and scholar mobility, joint cross-border program development, even the development of pan-regional universities. Developing the optimal configuration of organizations- governmental/non-governmental, professional, foundations- constitutes the second important approach to regionalization and Tuning has partnered with these groups in addition to the individual higher education institutions, which are the backbone and beneficiaries of any regionalization initiatives. The third approach involves the political will to guide and move the regionalization agenda forward. This is an area where Tuning has some influence by working with regional bodies such as the African Union and the European Commission.

VIII. **Final words**

New trends and developments such as higher education regionalization bring positive outcomes, but it is important to be mindful of potential negative consequences. Regionalization is a process firmly rooted on respect for differences in local culture and context. But concern lingers that integration can lead to an unintended outcome of standardization and homogenization.[32] It is crucial that higher education regionalization not become an agent of the zipper effect. The likelihood for this is less when the higher education sector itself is the catalyst and agent for higher education regionalization, but, as pointed out earlier in the paper, there are other policy sectors keen to use higher education as an instrument of regional integration for economic and political purposes. Careful monitoring is critical for all forms of regionalization.

Innovation is a term that is on the lips of leaders and policy makers in all sectors. Higher education is no exception. Innovation is linked with the application of knowledge and insight in new ways. It is essential to keep in mind that any process of alignment, harmonization or convergence of national higher education systems retains the capacity for innovation and change. Introducing another layer of bureaucracy and regulation to higher education need not stifle innovation in the classroom and research centres or, in institutional level governance and national/sub-regional policies. Just as regionalization is adapting to new trends, realities, and opportunities, it in turn needs to accommodate and stimulate new ideas and innovation.

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[32] Jane Knight, "New Developments and Unintended Consequences: Whither Thou Goest, Internationalization?", in *Higher Education on the Move: New Developments in Global Mobility*, edited by Rajika Bhandari and Shepherd Laughlin. Global Education Research Reports, 113 -25 (New York: Institute for International Education, 2009).

This paper proposed and discussed the FOPA model for analysing the complex and evolving phenomenon of higher education regionalization and demonstrated how Tuning initiatives relate closely to the model and are direct contributors to the regionalization process. There is no one way or right way to go about higher education regionalization. Each region, however defined, will develop its own path which acknowledges and respects the commonalities and differences among higher education institutions and systems. The academic, social, cultural, human and political benefits of higher education regionalization are many and diverse, but there are pitfalls along the way as well. The roadmap is not fully developed. Regionalization is an evolutionary process which builds on existing realities, current initiatives such as Tuning, and future endeavors which involve functional, organizational and political strategies that complement one other.

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Tuning as Instrument of Systematic Higher Education Reform and Quality Enhancement: The African Experience[1]

Karola Hahn and Damtew Teferra

Abstract: This article explores the state of higher education in Africa as it relates to the experience and lessons learned in the Tuning African higher education project. It analyses the specific African dimension of the methodology, its contribution to the reform efforts in teaching and learning, and the critical issues vital for quality enhancement and harmonization of higher education in Africa.

Keywords: Tuning; harmonization; curriculum development; reform; quality; higher education; Africa; regional integration.

I. Introduction

African higher education is undergoing major transformation driven by the "massification" of the system. As the system has shown phenomenal growth, in the face of increasing global competitiveness in production of knowledge—now undoubtedly identified as "key driver for socio-economic development"[2] and its importance unparalleled "in history"[3] —the imperative of quality enhancement has become paramount. Higher education in Africa has (re)gained a prominent place in major regional policies and strategies after decades of neglect. At the continental level, the African Union Commission has declared the revitalisation of higher education and its quality enhancement as one of its priority areas for the future development and the regional integration of Africa. The outcome of these new policies have been instrumental in spawning numerous sub-regional, regional and international higher education initiatives, including the harmonization and tuning of higher education in Africa.

Harmonization—a multidimensional and multi-actor process taking place at different system levels that promotes the integration of the Higher

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[1] Opinions expressed in this article do not necessarily reflect the views of the Steering Committee of Tuning, the UKZN or GIZ/AUC or others mentioned here.

[2] World Bank (WB), Constructing Knowledge Societies: New Challenges for Tertiary Education, Washington, D.C.: The World Bank Group, 2002.

[3] United Nations Organization for Education, Science and Culture (UNESCO), "2009 World Conference on Higher Education," UNESCO, 2009, http://www.unesco.org/en/wche2009/.

Education Space in the region—is intended to be achieved by collaborating across borders, sub-regionally and regionally, in curriculum development, educational standards and quality assurance, joint structural convergence, consistency of systems as well as compatibility, recognition and transferability of degrees to facilitate mobility.[4] One of the broadly tested sets of instruments to effectively implement harmonization in an academically driven approach is the Tuning Methodology.

The Tuning Methodology was developed in Europe to implement the decisions of the Bologna Declaration (Bologna Process) in developing curricula, reforming existing curricula, improving the teaching, learning and assessment, facilitating mobility and contributing to the structural compatibility of studies as well as the recognition of degrees. So far more than 2000 universities have employed the Tuning methodology to reform their curriculum, teaching, learning and assessment. Not only universities (and their leaders, managers, academic staff, students and graduates) but also ministries, agencies, employer and professional associations as well as students have been involved in the project. So far, tuning projects have been completed in more than 60 countries around the world including Europe, Latin America, Russia and the United States. Projects have recently started in Australia, India and China.[5]

The Tuning approach has also been introduced to Africa. In this article we document and analyse the African experience with *Tuning Africa* which has gone through a Feasibility Study (2010) and a Pilot Project from 2011-2013 involving 57 African universities and various stakeholders from the higher education sector in Africa.

II. **Tuning: An international higher education reform tool**

Tuning higher education is a systematic and consultative process that collaboratively engages a host of internal and external stakeholders led by academics to identify, define and develop curricula and programs in view of their effective implementation, assessment outcomes and competences.[6] The

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[4] Karola Hahn and Damtew Teferra, "Harmonization and Tuning: Integrating the Space of African Higher Education," Center for International Higher Education (CIHE), Boston College, 2012, https://htmldbprod.bc.edu/prd/f?p=2290:4:0::NO:RP,4:P0_CONTENT_ID:116932. January 30, 2012.

[5] Tuning Educational Structures in Europe (Tuning Europe), http://www.unideusto.org/tuningeu/.

[6] Damtew Teferra, "Harmonization and Tuning: The African Experience," a paper presented at the Africa-EU Joint Policy Workshop 'On Linking Institutional Evaluation

Tuning methodology provides a unique opportunity for academics to engage in an in-depth dialogue with their colleagues in similar (and related) disciplines or thematic areas across borders. While the primary focus of Tuning is regional, it can also be used in a country where common mechanisms, understanding and standards across subject areas or thematic programs are uncommon or unavailable.

A Tuning Project generally starts with a stocktaking of the structural elements of programs of a subject area or a thematic area of a program such as water, energy, sustainable development, or gender. The stocktaking considers the length of the program, the structure of the academic calendar (a year, a semester, a trimester or other structure e.g. presence and e-learning phases), and the program's content structure such as core topics addressed, and specializations. It also takes into consideration mandatory and elective modules, forms and sequences of assessment, degrees awarded, the underlying credit system and its principles (as in contact hour based or workload based), and the professional or academic entitlements of the degree.

In a second step, a stakeholder landscape is laid out. This stakeholder landscape comprises all organized actors that are relevant to the (reform of) respective programs under consideration. It comprises "primary" ministries such as education, higher education, science and technology, and also other ministries depending on the subject area or theme of the program. The stakeholder landscape also includes other regulatory bodies on both public and private spheres such as accreditation agencies, quality assurance agencies, professional associations, other universities offering the same or similar programs, major public and private employers and their associations or lobby groups, unions, student associations, and other intermediary bodies (e.g. national or regional university associations) and networks (universities, thematic networks, alumni). The stakeholder landscape may vary substantially between the countries and also within a country depending on the subject areas and themes.

In a third step the program-related generic competences and subject-specific competences are discussed and mandatory competences, that a graduate of a program is supposed to acquire, are outlined. Ideally, the intended achievements of these competences are laid down thoroughly according to each study year or tier of the study program. The identification of indicators and their assessment remains a challenging process. This step generally requires an extensive reflection and discussion and joint consultation in the Tuning group.

Practices. Quality Rating Mechanisms and Reinforcing Quality Assurance at Continental Level', Accra (Ghana), 18-19 December 2012.

In a next step, a survey questionnaire (online- and paper-based) and interviews are conducted with stakeholder groups that include students, alumni, academic staff and employers. The questionnaires and interviews focus on program- related generic competences and subject-specific competences that a graduate should have and rated according to their importance and achievement in a given program. The responses of the four stakeholder groups on the three variables, i.e. importance, achievement and ranking are then analyzed and compared. These data provide the ground for profound discussions on the reform needs of a program.

In a fifth step, the so-called meta-profile of the programs is abstracted and an ideal meta-profile of a reformed "African" program is developed jointly. The meta-profile is developed on the basis of the results of discussions in step four, and a correlation between the general African generic competences as well as the generic competences and subject-specific competences of the program compiled in different clusters. These clustered meta-profiles of programs can then serve as a frame of reference of those institutions that strive to reform their curricula and enhance the quality of teaching, learning and assessment. Existing programs could be compared with this referential "ideal" rendering. The outcome of the comparative analysis indicates the potential reform needs of a program and may serve as an orientation for the revision and further development of curricula.

The entire "toolkit" of the Tuning methodology includes developing appropriate methods of teaching, learning and assessment (TLA) as well as quality enhancement (QE). Due to time constraints, these core issues could not yet be addressed in depth in the "African Higher Education Harmonization and Tuning" pilot project. It is planned to address these issues in the future project phases.

III. **Regional Cooperation Scenes**

As noted above, a few years ago a paradigm shift on the role of higher education for continental development has started, identifying higher education as a key driver for development.[7] This shift has been instrumental in revitalization and broad reform efforts in the continent driven by national, regional and international imperatives. *Harmonization and Tuning of Higher Education in Africa* is one such core project in the implementation of the continent-wide and regional initiatives, to help harmonise, reform and

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[7] World Bank (WB), *Accelerating Catch-Up. Tertiary Education for Growth in Sub-Saharan Africa*. Washington, D.C.: The World Bank Group, 2009.

enhance quality in higher education as well as promote the responses of higher education to the continent's development needs and objectives by improving the relevance of higher education and the employability of graduates.

The policy of Harmonization of the African Higher Education Systems was launched by African Union Commission as part of its strategic objectives to bring closer member states and integrate the region. The European Commission supports its efforts through the Africa-EU Strategic Partnerships such as the *Africa-EU Migration, Mobility and Employment Partnership*, the *Science, Information Society and Space Partnership* and the *Joint Africa-EU Strategy Action Plan ((JAES)*. The Tuning Pilot Project is part of the *second Joint Africa-EU Strategy Action Plan* 2011-2013.[8]

For the last three decades, various initiatives to foster harmonization of higher education have been launched. The Arusha Convention of 1981[9] is the first and most prominent legal framework for the mutual recognition of degrees and qualifications in higher education in Africa. The Convention, ratified by 19 countries, which took effect in January 1983, is currently undergoing revision under the auspices of the African Union in cooperation with UNESCO. The Convention was meant to serve as the legal framework for the harmonization of higher education in Africa. When it was launched, it was intended to contribute to UNESCO's efforts towards promotion of international academic mobility and facilitate the implementation of some provisions of the charter of the then Organization of African Unity especially in regional co-operation and training of human resources. It was envisioned to promote development and application of knowledge, improve quality of higher education and contribute more effectively to the process of sustainable human development. Although it was ratified by the required number of Member States of the then Organization of the African Unity (OAU), the Convention was never implemented.[10]

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[8] European Union Commission and African Union Commission, "Joint Africa-EU Action Plan 2011-2013," Brussels, Addis Ababa, 2011, http://www.africa-eu-partnership.org/sites/default/files/doc_jaes_action_plan_2011_13_en.pdf.

[9] Regional Convention on the Recognition of Studies, Certificates, Diplomas, Degrees and other Academic Qualifications in Higher Education in the African States. Adopted at Arusha, 5 December 1981 (UN Treaty Series No. 21522), http://www.unesco.org/education/studyingabroad/tools/conventions_afr_cover.shtml.

[10] Mohamed Chérif Diarra, "Arusha Convention on the Recognition of Studies, Certificates, Diplomas, Degrees and Other Qualifications in Higher Education in African States. Synthesis Report," UNESCO Dakar Regional Office (BREDA), 2011, http://www.adea-wgemps.org/index.php/documents/reports/doc_view/163-arusha-convention-synthesis-report-24-may-2011.html. Paper presented at the workshop "Establishment of a Continental

In all five African (sub) regions initiatives are under way to promote and strengthen the harmonization and regional integration of higher education coordinated with initiatives and programs for quality enhancement.[11]

At the sub-regional level, the Protocol on Education and Training (1997), signed by 12 member states of the Southern African Development Community (SADC), stands as one instrument meant to achieve harmonisation of the higher education systems in the sub-continent. The main aim of the Protocol is "to progressively achieve equivalence, harmonisation and eventual standardisation of the education and training systems in the region". After ratification by all countries, except Angola, DR Congo and Seychelles, it entered into force in the year 2000. Articles 7 and 8 of this Protocol explicitly refer to the sector of higher education and training, research and development. Article 7 deals with co-operation in higher education and training and clarifies some of the key areas of harmonisation.[12]

A further major regional integration framework forms the East African Common Market Protocol that was signed in 2009 by five head of states of partner states, namely Burundi, Kenya, Rwanda, Tanzania and Uganda. Article 11 of this Protocol deals with the mutual recognition of academic and professional qualifications, experiences obtained, requirements met, licences or certifications granted in other partner states, harmonisation of their curricula, examinations, standards, certification and accreditation of educa-

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Accreditation Agency for Higher Education in Africa" African Union Commission, Addis Ababa, 10-11 April 2013; and Juma Shabani. "Quality Regimes in Africa: The Reality and the Aspirations." In *Chronicle of African Higher Education, May 2013*. Boston: Center for International Higher Education, Boston College, 2013.

[11] An overview on the regional endeavours with regard to quality assurance and accreditation of higher education in Africa are given by: Olusola Oyewole, "Harmonisation of Degree Structures, and Regional Qualifications Frameworks in the African Higher Education Space," a paper presented at the COREVIP AAU Conference, Stellenbosch (South Africa), May 30 - June 3, 2011; Olusola Oyewole, "African Harmonisation: An Academic Process for a Political End?" Boston: Center for International Higher Education, Boston College, 2013); Yohannes Woldetensae, "The Overall Landscape of Quality Assurance and Accreditation in Africa," a paper presented at the workshop "Establishment of a Continental Accreditation Agency for Higher Education in Africa", African Union Commission, Addis Ababa, 10-11 April 2013; and Juma Shabani, "Quality Regimes in Africa: The Reality and the Aspirations," in *Chronicle of African Higher Education, May 2013*, Boston: Center for International Higher Education, Boston College, 2013.

[12] Southern African Development Community (SADC), "Protocol on Education and Training in the Southern African Development Community (SADC)," 1997, http://www.sadc.int/files/3813/5292/8362/Protocol_on_Education__Training1997.pdf; and Karola Hahn. "Towards a SADC Area of Higher Education. Namibian Economy Policy Research Unit. NEPRU Research Report No. 30," Windhoek: Namibian Economic Policy Research Unit (NEPRU), 2005.

tional and training institutions for the purpose of free movement of labour within the region.[13] Higher education in the region is expected to play a vital role in the production of qualified labour force to spearhead the much anticipated growth and development.

In addition to this Protocol, three members of the East African National Regulatory Agencies for higher education, namely the Commission for Higher Education in Kenya, Tanzania Commission for Universities, and National Council for Higher Education, Uganda, signed a Memorandum of Cooperation in 2006. The Memorandum of Cooperation outlined key areas of mutual concern such as developing common criteria, benchmarks and frameworks for quality assurance, credit accumulation and transfer system, and framework for describing and quantifying the content of study programmes to standardize the process of equating and recognizing qualifications. The Memorandum of Cooperation led to the establishment of the Inter-University Council for East Africa (IUCEA), a regional university association which has developed into a key driver of the regional integration process of higher education in Eastern Africa.[14]

In Western Africa, the ECOWAS education sector policy was developed in 2002 based on a Protocol on Education and Training and a General Convention on the Recognition and Equivalence of Degrees, Diplomas, Certificates and Other Qualifications in ECOWAS Member States. The Convention seeks to promote the recognition of qualification through a set of accepted uniform criteria for assessment for the member states to develop the human resources necessary in the region and to reduce brain drain and to facilitate the exchange of skills and the pursuits of studies.[15]

The regional integration and harmonization processes are now guided by the ECOWAS Vision 2020 which was adopted in 2008. In the Strategic Plan, higher education is regarded as important tool to produce the labor force

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[13] East African Community (EAC), "Protocol on the Establishment of the East African Community Common Market," Intergovernmental Agreement, Arusha: EAC, 2009, http://www.commonmarket.eac.int/documentation/doc_view/48-common-market-protocol.raw?tmpl=component.

[14] Tuning Africa, "Feasibility Study into the Relevance of a Tuning Approach for Higher Education in Africa. Final Report. April 2011," Tuning Africa, 2011, http://www.tuningafrica.org/index.php?option=com_content&view=article&id=2&Itemid=105&lang=en; Inter-University Council for East Africa (IUCEA). http://www.iucea.org/.

[15] Economic Community of West African States (ECOWAS), "Regional Convention on the Recognition and Equivalence of Qualifications," 2002, http://www.comm.ecowas.int/dept/stand.php?id=e_e1_brief; ECOWAS, "Strategic Plan 2011-2015," Abuja: ECOWAS Commission, 2010. http://www.spu.ecowas.int/wp-content/uploads/2010/06/REGIONAL-STRATEGIC-PLAN-RFV-in-English.pdf.

needed to ensure the competitiveness of the ECOWAS region, hence a the explicit link of higher education to the socio-economic needs and labour market of the region.[16]

Initiatives of harmonization in higher education are also underway in the Arab countries of Africa however not limited to the African Arab countries but encompassing the entire Arab Region beyond continental borders. The Association of Arab Universities (AArU), founded in 1964 is an organization working within the framework of the Arab League striving to support and connect universities in the Arab world, and to enhance cooperation among them.[17]

A further prominent initiative in the Northern African Region is the Arab Network for Quality Assurance in Higher Education (ANQAHE). ANQAHE was established in 2007 as a regional network to coordinate and boost higher education quality assurance efforts. It comprises eleven Quality Assurance Agencies as full members and five further Quality Assurance Entities as Associate members from sixteen Arab countries. African members are Libya, Egypt, Sudan and Eritrea as well as Morocco and Tunisia. ANQAHE is active in the area of quality standard development, awareness raising for a quality culture and quality management, capacity building in quality assurance through distance education, policy dialogue, development of a regional qualification framework (Arab Generic Qualification Framework), dissemination of best practices and research on quality assurance in the region.[18]

With regard to the francophone Africa, the "Conseil Africain et Malgache pour l'Enseignement Superieur", CAMES, is the key driver of harmonization and quality assurance in higher education. The organization which was established in 1968 is promoting the alignment of programmes in its 19 member states. Since 2005, one of its overarching objectives is the structural harmonization of seven francophone degrees[19] to the "Licence-Master-Doctorat" (LMD) reform in line with the Bologna process. "However, implementation of this reform faces some challenges mainly due to lack of national quality assurance agencies to accredit programmes and maintain a level of quality that meets regional and international standards."[20]

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[16] Ibid.

[17] Association of Arab Universities (AARU), http://www.aaru.edu.jo/.

[18] Arab Network for Quality Assurance in Higher Education (ANQAHE), http://www.anqahe.org/.

[19] (1) *Diplôme d'études Générales, (2) Licence, (3) Maîtrise, (4) Diplôme d'études approfondies, (5) Doctorat de troisième cycle, (6) Doctorat unique* and (7) *Doctorat d'Etat.*

[20] Juma Shabani, "Quality Regimes in Africa," 1.

IV. **From Feasibility Study to the Tuning Africa Pilot Project**

At a political level, the experiences of the Tuning approach in Europe and other world regions were contemplated as instrument to foster regional integration of higher education in Africa. The African Union Commission supported a European Union commissioned Tuning Africa Feasibility Study in 2010 to explore the relevance, appropriateness, and the eventual scale of the initiative to support the African harmonization strategy. The study was commissioned by the European Commission within the broader context of joint African-EU policy for the development of Higher Education in Africa and in response to a recommendation from the Conference "Developing Links: EU/Africa Cooperation in Higher Education through Mobility" in December 2008.[21]

The Tuning Africa Feasibility Study has shown the Tuning approach to be an important tool for harmonization in terms of its relevance, appropriateness and timeliness for the continent. The effort is recognized as complementing and strengthening existing regional initiatives as well as the efforts of professional associations and academic networks. What is particular about Tuning is that it is a bottom-up approach driven by academics directly involved in the development of curriculum and programs. The Tuning exercise enhances a sense of ownership of the process by academics, promotes the exchange of good practices with peers across borders, and fosters staff collaboration on curriculum development and other initiatives—in the process contributing to networking and capacity building.

The timeliness of a Tuning Pilot Project is not only seen in the political context of regional integration but also in its significance to the rapid expansion of higher education, its quality gaps, relevance of curricula and employability of graduates. Moreover, the signature participative approach that attracts various stakeholders fosters revitalizing curricula, provides a thorough understanding of curricula at subject level and facilitates the intra-continental student mobility by bridging gaps between disparate educational systems. The joint bottom-up dialogue on curriculum development and on the formulation of common points of reference made possible an in-depth reflection on methods of teaching, learning and assessment as well as effective quality management.

The Feasibility Study also considered distance education—a pioneering approach in the Tuning initiative. This is largely because distance education

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[21] Tuning Africa, "Feasibility Study," 3.

has been presumed to play an important role in addressing the insatiable appetite for higher education in the region. The special characteristics of distance education—catering to students in the peripheries or remote areas, professional development and, lifelong learning—have been considered instrumental.

The Feasibility Study concluded that "Tuning" is consistent and coherent with the overarching policy framework of the African Union Harmonization Strategy and numerous existing regional initiatives in higher education reform, quality assurance, standard setting and recognition such as national qualification frameworks, regional qualification frameworks, and the Arusha Convention. Furthermore, it was described as contributing to providing the platform for dialogue and encouraging regional, inter-regional and inter-continental networks of institutions and academics.

Unlike other initiatives which tend to be exclusively a top-down or bottom-up approach, the Tuning process is a dual mode interaction that combines top-down and bottom-up approaches providing a dialogue platform where academics play the prominent roles. The adaptive and consultative features of the Tuning approach seem ideal in promoting the sector-crossing dialogue needed to implement espoused policies and strategies.

Based on a consultative process that comprised numerous relevant African stakeholders, the African Union Commission decided in March 2011 to test the Tuning approach as potential instrument in the implementation of the Harmonization Strategy. In a validation workshop with various stakeholder organizations of the higher education sector in Africa held in Nairobi in March 2011, five priority areas were identified for the pilot project that comprised Agricultural Sciences, Civil and Mechanical Engineering, Medicine and Teacher Education.

A call for participation in the "Harmonisation and Tuning African Higher Education" project was launched in October 2011. In November 2011, a selection workshop was held in Dakar, Senegal, followed by an international conference entitled "Tuning, Credits, Learning Outcomes and Quality: A Contribution to Harmonisation and the Space for Higher Education in Africa". The forum brought together prominent regional higher education associations, quality assurance bodies and higher education officials.

The selection workshop screened 96 applications. Ethiopia submitted the largest number of applications (9) followed by Nigeria and Kenya (each 7). The largest application was in Agricultural Sciences (24) followed by Teacher Education (22). Others include Mechanical Engineering and Civil Engineering 9 applications each; Medicine 10. In total, 74 applications were considered for participation in the Tuning pilot project.

The selection for the Tuning Africa Pilot Project was based on the following criteria:

1. Demonstration of national excellence in the subject areas including innovation, teaching and learning, employability, linkages between research and teaching, cooperation with industry;
2. Participation in collaborative networking and capacity for dialogue with other institutions working on the same subject area;
3. Demonstrable evidence to contribute to the development of higher education in the country and region;
4. Commitment to implement the outcomes of the pilot project;
5. Experience in distance learning;
6. National and regional balance of the institutions applying, including type of institutions (e.g. institutions from urban and rural areas).

A commitment letter from the leadership of the university was one of the pre-requisites for eligibility to participate in the pilot project so as to ensure the ownership and a sustainable impact of the pilot project at institutional level. As not all short-listed universities were finally selected, further recruitment efforts were made to reach 60 — the designated number of potential participants for the pilot phase.

V. **The Pilot Project: Relevant Subject-Areas**

The Tuning Africa participants agreed that the Pilot Project focus on five subject/thematic areas of relevance for Africa. It was discussed whether the choice of subjects follow along the lines adopted by the Pan African University (PAU). [22] As PAU is targeting the postgraduate level, it was agreed not to adopt this framework but instead develop a new one targeting five specific subject areas "allocated" to five regions.

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[22] The Pan African University is an initiative of the African Union Commission to revitalize higher education and research in Africa. It is conceptualised as a network university based on five thematic regional hubs providing graduate education on Master and doctoral level and engaging in research in areas relevant for the development of the continent. Four of the five hubs are in a planning stage; three of them started first academic operation late 2012 and beginning 2013. See also Damtew Teferra, "Pan African University: Rescuing the Vision" International Network for Higher Education in Africa (INHEA) Editorial Series (June 2012), Boston: Center for International Higher Education, Boston College, 2012, https://htmldbprod. bc.edu/prd/f?p=2290:4:0::NO:RP,4:P0_CONTENT_ID:118382.

Table 1

Overview Participation and Scope of the "Tuning Africa" Pilot Project

Subject Area	Lead Managing Country of SAG (Subject Area Group)	Number of African Countries Participating in the Pilot Group
Agriculture	Nigeria	12
Civil Engineering	Ethiopia	10
Mechanical Engineering	Cameroun	12
Medicine	Egypt	10
Teacher Education	South Africa	13

Two engineering disciplines were selected to address the continent's huge needs in these fields. It was also noted that these fields promote sustainable development through science and technology education. Each of the subject areas was attributed to one region. The lead university of each selected subject area coordinated a network of ca. 10 universities participating in the subject area group (SAG). In total 57 African universities participated in the pioneering exercise. The SAG held four meetings in the following venues:

1. Yaoundé, Cameroun: 23-25 January 2012
2. Cape Town, South Africa: 15-18 May 2012
3. Brussels, Belgium: 18-22 November 2012
4. Nairobi, Kenya: 21-24 January 2013

Teacher Education was mentioned in all African regions as a prime area of concern. Teacher Education is considered a core challenge on all system levels of education, in particular in science and technology and increasingly also with regard to Technical and Vocational Education (TVE) which is likely to assume greater prominence in the future, as the training needs of the young is soaring.

Agriculture continues to play a critical role in most African countries as it continues to be a source of livelihood. Its significance is prominent at the region is grappling with food security and development. It remains an important foreign exchange earner in the continent and provides the raw materials for numerous industrial processes. In Africa, the agricultural sector is still the core sector and employs 65 per cent of the labour force and accounts for 32 percent of gross domestic product (GDP).[23]

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[23] World Bank (WB), "Fact Sheet. The World Bank and Agriculture in Africa," 2013, http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/0,,contentMDK:21935583~pagePK:146736~piPK:146830~theSitePK:258644,00.html.

The management and technological developments in the agricultural sector are lagging behind the needs of the continent; and higher education is expected to play an important role in enhancing agriculture reforms. And yet graduates from Agriculture seem to lack the requisite knowledge and appropriate competences needed for meaningful impact on the modernization of agriculture.

Civil Engineering was selected as one of the programs for the Tuning Pilot Project due to the fact that urbanization is a growing African phenomenon as the region's population is rapidly growing. This has been a constant concern for governments and development agencies. In 2030, half of the African population will live in cities. According to a recent report by UN-HABITAT, the United Nations Agency for Human Settlements, the population of some cities is set to swell by up to 85 per cent in the next 15 years. The most populous city in 2010, Cairo, will grow by 23 per cent to 13.5 million people. By 2025, however, it will have been overtaken by both Lagos (15.8 million) and Kinshasa (15 million). Food and water shortages, poor infrastructure and a lack of housing will remain outstanding problems during such rapid urbanization.[24]

This demographic development has a deep impact on energy, water, and the climate. The built environment will need to grow exponentially. Infrastructure such as housing and informal settlements, social infrastructure (schools, hospitals, kindergartens, sanitation facilities, recreation centers, sport facilities) will be needed for millions of inhabitants. New waste and water management systems will be needed. Construction need to increase with regard to traffic and transport (roads, bridges, railways, and airports), industrial buildings, plants and production, processing and storage facilities as well as social and urban spaces. Hence the need for abundant and competent civil engineers to guide, build and support this mammoth construction needs is palpable.

The number of engineering graduates in Africa is lagging far behind the international norms. For many years there have been relatively small and few mechanical engineering programmes in African universities but in recent years the numbers are increasing, albeit, slowly. There appears to be an interesting confluence of efforts in African universities to boost the number of mechanical engineering graduates either through increasing the number of universities offering such programmes or increasing the intake into existing mechanical engineering programmes. This signals progress and highlights the need to restructure mechanical engineering programmes and their

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[24] Economist, 13 December 2010.

curricula to meet future challenges and generate graduates with the knowledge and competences required.

Many African countries have formulated development and transformation plans based on the promotion of science and technology to boost industrial growth and social well-being. Mechanical Engineering is thus perceived as a crucial discipline to provide the qualified labour force needed for industrial development, which was the main rationale to include it into the Tuning Pilot Project.

In some countries, Mechanical Engineering — as the core engineering discipline — is emerging as a new field of study. For example, in Ghana only one university offered Mechanical Engineering at the degree level for over 40 years; but now, in Zambia and Egypt, there are three. In Namibia, the University of Namibia is building its first Faculty of Engineering in the North. As part of massive expansion and reform, Ethiopia has targeted an enrolment rate of 70 per cent in Engineering and 30 per cent in Humanities as it is establishing 10 institutes of technologies.

Only few African countries such as Egypt and South Africa generate a relatively high number of engineering bachelors per capita—approaching the level of USA and Germany. However, South Africa still plans to boost the numbers of engineering graduates and nearly double them up to 15,000 by 2014. In 2009 it granted 1,459 Mechanical Engineering degrees at the BSc level in addition to 111 at the postgraduate level.[25]

Some of the disciplines in the pilot project are highly regulated study programs with many stakeholders playing a crucial role. This refers to Medicine, Teacher Education, and Civil Engineering. Ministries, state and quality assurance agencies as well as professional associations and lobbyists from industry regulate and/or influence standards and access to professional pathways. This meant that the autonomy and academic freedom of institutions needed to be moderated in reforming curricula as they were to be closely coordinated with a host of different agencies. This thus makes curricular reform efforts in professional academic programs slightly more cumbersome, if not challenging.

The institutional stakeholder landscape of Civil Engineering in two African countries is given below, in order to illustrate the complexity of meaningful higher education reforms in the respective field and highlight the importance of integrating stakeholders in the reform process.

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[25] Tuning Africa, "Presentation of Final Report of 5 Subject Areas. Final Report 2011-2013." Paper presented at the Joint Africa—EU Strategy Tuning Seminars, Nairobi, 23 January 2013. http://www.tuningafrica.org/images/stories/documentos/sag_presentation_nairobi_january%202013.pdf.

Table 2

Institutional Stakeholder Landscape of Civil Engineering
in Ethiopia and South Africa

Ethiopia	South Africa
Adama University of Science and Technology	Association of Schools of Construction of Southern Africa (ASOCSA)
Addis Ababa Institute of Technology (AAiT), Ethiopian Institute of Architecture, Building Construction and City Development (EiABC) — both Addis Ababa University	Construction Industry Development Board
	Council for Science and Industrial Research (CSIR)
	Council for the Built Environment (CBE)
	Council on Higher Education (CHE)
Association of Construction Technology and Management	Durban University of Technology (DUT)
Association of Ethiopian Architects	Engineering Council of South Africa (ECSA)[26]
Consultant and Practicing Engineers	Ministry of Environment
Engineering Capacity Building Programme (ecbp) - Bilateral Ethio-German reform programme	Ministry of Higher Education
	Ministry of Human Settlement
	Ministry of Local and Provincial Government
Ethiopian Railway Authority	Ministry of Public Works
Ethiopian Roads Authority	Ministry of Science and Technology
Ethiopian Society of Engineers	Ministry of Transport
Ethiopian Society of Water Resource	Ministry of Water Affairs
Gondar University	National Housing Builders Registration Council (NHBRC)
Haramaya University	
Hawassa University	Nelson Mandela Metropolitan University (NMMU)
Higher Education Relevance and Quality Agency (HERQA)	South African Association for Consulting Engineers (SAACE)
Higher Education Strategy Center (HESC)	
Jimma University (JU)	South African Black Technical and Allied Career Organisation (SABTACO)
Mekelle Institute of Technology (M-EiT) — Mekelle University	South African Bureau of Standards (SABS)
Ministry of Education	South African Federation for Civil and Electrical Contractors (SAFCEC)
Ministry of Housing	South African Institute for Civil Engineers (SAICE)
Ministry of Science & Technology	
Ministry of Urban Development and Construction	South African Quality Authority (SAQA)
	Southern African Regional University Association (SARUA)
Ministry of Water and Energy	Stellenbosch University
Ministry of Water Works	Tshwane University of Technology (TUT)
Student Council	University of Cape Town (UCT)
	University of Free State (UFS)
	University of Johannesburg (UJ)
	University of KwaZulu Natal (UKZN)
	University of Pretoria (UP)
	University of the North West (UNW)
	University of Witwatersrand (Wits)
	Walter Sisulu University, East London

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[26] ECSA is a statutory council which is inter alia responsible for the registration of professional engineers and for the accreditation of the academic programmes for engineers at South African universities.

VI. **Generic Competences in African Higher Education**

The term *competence* represents a dynamic combination of capabilities, knowledge, understanding, skills and abilities.[27] Competences are formed in various course units and assessed at different stages. The competences may be differentiated as subject area related competences (specific to the respective field of study) and as well as generic competences (common to any degree course).

Thus, generic competences identify shared elements common to any degree, such as capacity to learn, ability to make decisions, design projects, and skills in interpersonal communication, among others. They are complemented by subject related competences inherent in a degree program which relates to the specific circumstances of a given field of study.

One of the objectives of the Tuning Higher Education in Africa pilot project was to identify generic competences that are relevant to an African graduate — irrespective of the disciplinary or thematic program. The participating subject area groups were therefore requested to identify generic competences that would be expected as learning outcome in their fields of study—as it relates to the African context. The generic competences lists developed by the five subject area groups were thoroughly discussed, analyzed, and integrated. The results of this process were compiled into a list of 18 generic competences as most relevant to higher education graduates in Africa. These are:

1. Ability for conceptual thinking, analysis and synthesis
2. Professionalism, ethical values and commitment to UBUNTU (respect for the well-being and dignity of others) (good will)
3. Capacity for critical evaluation and self-awareness
4. Ability to translate knowledge into practice
5. Objective decision making and practical cost effective problem solving
6. Capacity to use innovative and appropriate technologies
7. Ability to communicate effectively in official/ national and local languages
8. Ability to learn to learn and capacity for lifelong learning (continued development)
9. Flexibility, adaptability and ability to anticipate and respond to new situations

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[27] Julia González, and Robert Wagenaar, eds., *Tuning Educational Structures in Europe. Universities' Contribution to the Bologna Process. An Introduction*, 2nd ed. (Bilbao: Universidad de Deusto, 2008).

10. Ability for creative and innovative thinking
11. Leadership, management and team work skills
12. Communication and interpersonal skills
13. Environmental and economic consciousness
14. Ability to work in an intra and intercultural and/or international context
15. Ability to work independently
16. Ability to evaluate, review and enhance quality
17. Self-confidence, entrepreneurial spirit and skills
18. Commitment to preserve African identity and cultural heritage

Two of the identified generic competences seem unique to Africa as they have not so far appeared in the previous Tuning Higher Education projects in other regions of the world. These are commitment to UBUNTU (respect for the well-being and dignity of others—good will) and commitment to preserve African identity and cultural heritage.

Analysis revealed the following top five generic competences for African higher education in all the identified disciplines:

1. Ability for conceptual thinking, analysis and synthesis
2. Professionalism, ethical values and commitment to UBUNTU
3. Capacity for critical evaluation, and self-awareness
4. Ability to translate knowledge into practice
5. Objective decision making and practical cost effective problem solving

Some subject area groups extended the list of generic competences in the context of the needs of their programs. For example, the Mechanical Engineering Group added the following Generic Competences: *Commitment to safety*, A*bility to negotiate and resolve conflicts, Ability to undertake research at an appropriate level, and Skills in the use of ICT*.

VII. **Subject-specific Competences in African Bachelor Programs**

After identifying the generic competences, each subject area group went about defining subject specific competences. A general outcome of the Tuning Groups emphasized the need for subject-specific competences that enhance the practice-orientation and relevance of the studies.

The Civil Engineering Working Group identified the subject specific competences in a two-step process. To establish the subject specific competences of a Civil Engineering graduate, the group exhausted the

requisite skills in the different phases of a civil engineering project. This approach was intended to deliberately link the identified competences to the needs of the labour market and the working environment of civil engineering graduates.

The group has identified six stages in a civil engineering project which it then allocated to the subject specific competences in the different stages of the project. The six project stages include:

1. Conceptualising the construction project (Describing the scope of the project)
2. Viability of the construction project
3. Design and feasibility of the construction project
4. Documentation and procurement
5. Construction (realisation, implementation)
6. Close out of the construction project

Some of the different construction project stages share similar competences which resulted in their duplication. The distinctive 37 subject-specific competences earlier identified were scaled down to 20 by organizing, systematizing and integration of the competences appropriate in a Civil Engineering program. Finally the subject specific competences were clustered — a first step towards elaborating a meta-profile of the program.

The other subject area groups proceeded accordingly, but rather focusing on the more heterogeneous areas of occupation of the future graduates as not all programs target clearly structured professional processes as Civil Engineering, where a construction project follows very clear standardized steps which require specific competences.

The Tuning Agriculture Group agreed that an African University graduate of Agriculture acquire sixteen subject specific competences on graduation. This includes:

1. Knowledge and understanding of agricultural production, and basic sciences
2. Ability to identify problems and apply knowledge to solving day-to-day agricultural challenges
3. Ability to evaluate and manage agricultural projects, as well as carry out financial appraisals
4. Entrepreneurial and creative skills
5. Ability to design, plan and implement agricultural research
6. Ability to do business in any part of the world
7. Ability to understand, and adapt to new and emerging technologies in agriculture, including ICT

8. Ability to implement sustainable practices and technologies for the management of natural resources
9. Ability for independent thinking and be able to work with minimal supervision in the area of agriculture
10. Ability to adapt and transfer technology, as well as be able to create new technologies
11. Ability to know, advice and implement agricultural policies, and regulations
12. Ability to make sustainable use of water and other natural resources for agricultural use
13. Ability to understand and work within the organization, business and community management of the rural sector
14. Ability to identify pests, pathogens, and weeds associated with crops, animals and their products
15. Ability to improve quality and safety along the agricultural value chains
16. Ability to select and manage machinery, implements and equipment for agricultural use in different farming systems

The Teacher Education Group identified four categories of competences: "Knowledge and Understanding", "Practice and Skills", "Values and Ethics", and "Interpersonal skills". A process followed to ensure that the generic competences were captured in each of the four categories and a consensus was established on the following 17 priority competences.[28]

1. Subject knowledge/understanding of the discipline
2. Applying ICTs
3. Developing resources and instructional materials
4. Critical thinking, problem solving, creativity, reflection
5. Ability to assess and evaluate, including self and others
6. Counsel, guide and resolve conflict (peace education) for complex situation
7. Interpret curriculum documents, information and sources, and see them as a roadmap
8. Project management
9. Be able to choose, use and design innovative teaching and learning strategies

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[28] Tuning Africa, "Presentation of Final Report of 5 Subject Areas. Final Report 2011-2013." Paper presented at the Joint Africa—EU Strategy Tuning Seminars, Nairobi, 23 January 2013. http://www.tuningafrica.org/images/stories/documentos/sag_presentation_nairobi_january%202013.pdf.

10. Be able to research (observe, describe, analyse)
11. Understand and apply policies and regulations
12. Ability to identify and deal with students with special needs, gifted and otherwise
13. Ability to work in a team
14. Professionalism, ethics and values: ability to understand and abide by the ethics and values of the teaching profession
15. Ability to become a lifelong learner
16. Ability to develop competencies for employability in students (ability to enhance employability in one's own profession)
17. Ability to inspire self confidence in the learners

As a general frame for a program the SAG Mechanical Engineering identified four major categories: Basic Engineering, Engineering Analysis, Engineering Design, and Engineering Practice. Each category then got populated on relevant requisite knowledge and skills as indicated in the table below.

Table 3

Outcomes Achieved in the Subject Area Group Mechanical Engineering

Basic Engineering	The ability to demonstrate knowledge and understanding of the basics of:
	Mathematics including differential equation, integral calculus, linear algebra, vector algebra, numerical methods, probability and statistics
	High-level programming
	Solid and fluid mechanics, statics and dynamics
	Material science engineering, and strength of materials
	Thermal science: thermodynamics and heat and mass transfer
	Principles of turbo-machinery, reciprocating engines and machines, and material handling equipment.
	Electrical and electronic circuits, electrical machines and drives
	Control systems

Table 3
Outcomes Achieved in the Subject Area Group Mechanical Engineering
(continued)

Engineering Analysis	The ability to analyse:
	Mass, momentum and energy balances and efficiency of systems
	Hydraulic and pneumatic systems
	Machine elements and mechanical systems
Engineering Design	The ability to carry out design of machine elements and mechanical systems using both traditional means and computer-aided tools
Engineering Practice	The ability to demonstrate the safe use of workshop and laboratory equipment
	The ability to operate and maintain mechanical equipment and systems
	Understand and apply safe systems, codes and standards at work
	The ability to select and use control and production systems

VIII. **Competences: Importance, Achievements and Ranking**

As part of the Tuning Methodology set of instruments, a survey was conducted by all five subject area groups in all participating countries. The objective of the survey was not only to raise data but to also initiate a dialogue on institutional, subject area (discipline) and general level. The total number of respondents of the five subject areas considered was 4323 distributed across four stakeholder groups as such: Students (1304), Academics (1130), Graduates (1051) and Employers (838).

The consultative survey results were subjected to a host of analysis—according to their importance, ranking and actual achievement—in the different subject area groups. In general, there was a correlation in all stakeholder groups and subjects regarding the discrepancy of the importance of competences and their achievement.

The Academics stated a discrepancy - shared in all subject groups - with regard to ranking and achievement in the following two competencies: *Ability for creative and innovative thinking* as well as *Professionalism, ethical values and commitment to UBUNTU*. The Employers generally rated the achievement of all generic competences much lower than their importance — which clearly indicates an employability-oriented reform need of the

programs. Employers in particular experience a huge gap between importance and achievement with regard to the following competences: *Ability to transfer knowledge into practice*, *Ability for creative and innovative thinking* as well as *Objective decision making and practical cost effective problem solving*. Students recognized a strong correlation of importance and underachievement with regard to the generic competences. The students identified the highest discrepancy with regard to the *Capacity to use innovative and appropriate technologies*.[29]

All stakeholder groups identified the most important competences as the *Ability to transfer knowledge into practice* as well as *Ability for conceptual thinking, analysis and synthesis*. The other competences in the top five ranking however varied. All groups ranked the following competences as less important: *Ability to work in an intra- and intercultural and/or international contexts*, *Environmental and economic consciousness*, and *Commitment to preserve and to add value to the African identity and cultural heritage*.

There was a commonly shared understanding in all status groups that the highest achievement was an *Ability to communicate effectively in official/ national and local language* and in the *Ability to work independently*. The employers ranked *Leadership, management and team work skills* much higher than the academics.

The results of the Mechanical Engineering Group on the generic competencies, for instance, yielded a number of important general observations: The levels of importance and corresponding levels of achievement for each competence identified the current gaps. Levels of importance were much higher than levels of achievement. The majority of the proposed generic competences was considered highly important by most stakeholders. Furthermore, general agreement, among the various stakeholder groups on the ranking of the common generic competencies, was evident.

The highest gaps between importance and achievement levels were identified in competencies related to the *Ability to use innovative technologies*, *Ability for creative and innovative thinking and self-confidence* and *Entrepreneurial skills*. Competencies related to environmental and economic consciousness, to the preservation of African cultural heritage, and the ability to work in regional and international contexts were placed at the bottom of importance and ranking lists by all groups.

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[29] Pablo Beneitone, "Generic Competences: Consultation with Stakeholders in Africa. Some Results and a Comparison with Other Regions," a paper presented at the Joint Africa—EU Strategy Tuning Seminar, Cape Town, 15 May 2012, http://www.tuningafrica.org/images/stories/documentos/africa_presentacion_cape_town_pablo_2012_generic_competences.pdf.

The Tuning Agriculture Group identified a high correlation between academics and employers in all aspects which may be interpreted as an outcome of a close cooperation and communication between the academic and the labour sector. There is considerable agreement in the top five rankings stated above. All the stakeholders, except the graduates, considered *Sound knowledge and understanding of agricultural production*, *and basic sciences* as the first priority competence for agriculture graduates. This was closely followed by *Ability to identify problems* and *Apply knowledge to solving day-to-day agricultural challenges*, which was however ranked first by graduates.

All the stakeholders are in close agreement that agricultural graduates should be able to design, plan and implement agricultural research and this was ranked as either third or fourth in the list of priorities. The ability to possess entrepreneurial and creative skills was ranked third by employers and graduates, fourth by academics and fifth by students. *Ability to evaluate and manage agricultural projects*, as well as *Ability to carry out financial appraisals* were ranked fifth by academics and employers and four by students respectively.

The analyses of the Civil Engineering Programs identified the following generic competency gaps missing completely (or only partially featured) in existing curriculum and was concluded as not leading the graduate to the expected learning outcomes. A need for fostering the following competences in the Civil Engineering Programs in Africa became evident in the following areas:

1. Capacity to use innovative and appropriate technologies
2. Commitment to preserve and to add value to the African identity and cultural heritage
3. Environmental and economic consciousness
4. Self-confidence, entrepreneurial spirit and skills
5. Professionalism, ethical values and commitment to UBUNTU

In Civil Engineering, the competences with the largest gaps between the achievement in the curriculum and the importance are valued with high importance. These competences seem to be quite challenging to transfer to students. Hence, further discussions were recommended on how to integrate these competences into the curriculum and how teach and assess them.

The analysis of the subject specific competences in Civil Engineering revealed the following five competences with gaps regarding the achievement in the curriculum and their importance:

1. Ability to program (to plan the process and allocate resources)
2. Commitment to health and safety

3. Capacity to introduce health and safety measures in construction and materials
4. Skills to deal with dispute resolutions
5. Skills in commissioning

It was considered that these gaps may have been the result of contents not being taught at university level where the greatest proportion of the time is spent on educating students in how to design and analyse problems from a mathematical point of view. The overall tendency is to teach mathematics and science skills at the university level and relegate the rest, such as programming, health and safety, dispute resolutions and commissioning skills, to graduates workplace for development in the earlier years of their professional life. It is also posited that the competence gaps may have been the matter inherent in Construction Technology and Management Programs than in Civil Engineering Programs.

It is true that the mentioned competences may be acquired as on-site aspects, hands-on courses or extra courses offered by employers, and thus can be add-ons (electives) in the core curriculum. The competences may not be part of a program as they may have financial implications for the employers, for instance on matters of safety and health. The Civil Engineering group supports the idea of integrating *Health, safety and security* into Environmental Impact Assessment methodology and frameworks. However, it is presumed that legal and regulating frameworks set by governing bodies may leave little room for manoeuver.

The wide consultations with different stakeholders indicate a big discrepancy between what stakeholders considered "important" and what is actually "achieved" in the educational delivery. Most typically, the *Abilities of conceptual thinking, analysis and synthesis* as well as the *Translation of knowledge into practice* seem to be commonly shared gaps across all subject area groups.

The survey by the Medicine subject area group identified a huge gap between the top five competences agreed upon and their achievement. Achievement is consistently given a lower rating than the importance attached to it in three areas of concern:

1. Teamwork — leadership — management
2. Professionalism
3. Effective and sensitive communication

The Teacher Education Group identified a large gap with regard to the *Ability to develop own and learners' entrepreneurial skills*. All groups shared the same opinion. There seem to be substantial gaps in Teacher

Education programs in the instructional service delivery. The respondents singled out *Professionalism, ethics and values, Ability to understand and abide by the ethics values of the teaching profession* and *Develop own and learners' entrepreneurial skills* as poorly achieved; and yet these are some of the most important competences a teacher is expected to possess. One of the most striking revelations of the findings was the rating of academics on competence to develop own and learner's entrepreneurial skills as the least importance and least achieved.[30]

The comparison of results between the Tuning Europe, Tuning Latin America and the Tuning Africa projects showed a commonality of the top two competences. These are *Ability to translate knowledge into practice* and *Ability for conceptual thinking, analysis and synthesis*.[31]

IX. Meta-Profiles of Programs: Similarities, Discrepancies and Reform Needs

An analysis of the generic and subject specific competences in each subject area group as well as the analyses of the questionnaires with regard to "importance", "achievements" and "ranking" of competences led to the development of a so-called meta-profile of each program. The meta-profiles represent the main structural elements: the core content thematic areas combined or clustered with the generic and subject specific competences which give a program its specific identity. The meta-profiles of the subject areas of the Tuning pilot project were developed by each group as referential elements (points of reference) for further dialogue and reflection and analysis of possible classifications (clusters).

The experiences in the development of the meta-profiles of the programs indicated major differences in specific subject areas. The required knowledge in Civil Engineering is generally taught in the following core clusters: design and analysis, construction and project management. The Civil Engineering group concurred on the following distribution of the curriculum: *Design and analysis* 80 per cent, *Construction* 10 per cent and *Project management* a further 10 per cent. This distribution predicates on most universities offering separate degrees in Construction Management and therefore the knowledge that the Civil Engineering students need is seen as

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[30] Tuning Africa, "Final Report of Teacher Education." Paper presented at the Joint Africa-EU Strategy Tuning Seminars. Fourth General Meeting, Nairobi, 23-25 January 2013. http://www.tuningafrica.org/images/stories/documentos/booklet_nairobi_ingles_subir.pdf.

[31] See also Beneitone, "Generic competences."

basic knowledge in that particular field. The same is considered to apply to project management. In generating the meta-profile, the Civil Engineering group clustered the 18 generic competences into the following areas: *Critical thinking*, *Professionalism*, *Creativity*, *Communication*, *Leadership*, and *Regulation*.

The Tuning Agriculture Group clustered the competences around the following core categories: *Learning process*, *Social values*, *Innovation*, *Organization* and *Communication skills*, *Technical and technological capacity*. The comparison with existing programs revealed that the main aspects were represented in all programs, though some elements of the ideal meta-profile, such as *Entrepreneurial and creative skills*, needed further discussion on the teaching and learning process. Also the communication of the agricultural professionals with other professionals or the respective stakeholder (as farmers) in different languages (e.g. in multi-language cultures/regions/countries) was perceived as challenging. In this group, several suggestions were made to guide future reforms including bringing trainees in direct contact with farmers, ensuring good practical content in agricultural programs, integrating a research work and writing a thesis in the final year of studies, as well as the training of newly recruited lecturers in pedagogy as a preparation for teaching.

The Tuning Medicine Group agreed that the detailed curriculum in Medicine may vary from institution to institution, and between regions and countries. However, it stressed that the competences of a graduate in Medicine remain effectively universal. Consequently all graduates in Medicine must be expected to have achieved an effective competence in each of the core areas of the subject (see below). At the same time, the group recognized Medicine as a highly dynamic subject with the curriculum constantly requiring review, update and revision to cope with contemporary social, economic and scientific needs as deemed by changing contexts and challenges.

As an outcome of the survey and consultation process, the Medicine group explored the potential architecture for a profile of a medical graduate in Africa and identified clusters of skills and competences following intensive transnational and trans-language working groups, i.e. mixing Francophone and Anglophone. The group adopted a concept of 'pillars' to describe the critical support and architectural components in a general medicine education and identified seven 'pillars' which provide the basis for the meta-profile of a Medical graduate. These include *Clinical expertise and knowledge*, *Community and environmental health focus*, *Professionalism*, *Effective and sensitive communication*, *Teamwork/leadership management*, *Engagement in a learning journey*, *Continuing professional development* as well as *Adaptability to ICT and new technology*.

Within these seven 'pillars' the group highlighted specific African features. Hence a '*Community and environmental health focus*' is considered to be particularly relevant for African graduates. This is predicated on preparing medical students for the challenging urban and rural African contexts which demand special skills to serve diverse communities.

Similarly '*Effective and sensitive communication*', has received particular resonance in recognition of the wide language, educational, social, economic and cultural differences that exist across the continent. Communication in many African countries can present challenges because of the number and variety of languages spoken in Africa. This thus entails that the medical practitioner needs to be particularly thoughtful about the way in which information is conveyed and processed. '*Adaptability to ICT and new technology*' involves not simply the need to be competent in the recent innovations but also recognition of the variety of practical challenges in rural and urban contexts in Africa.
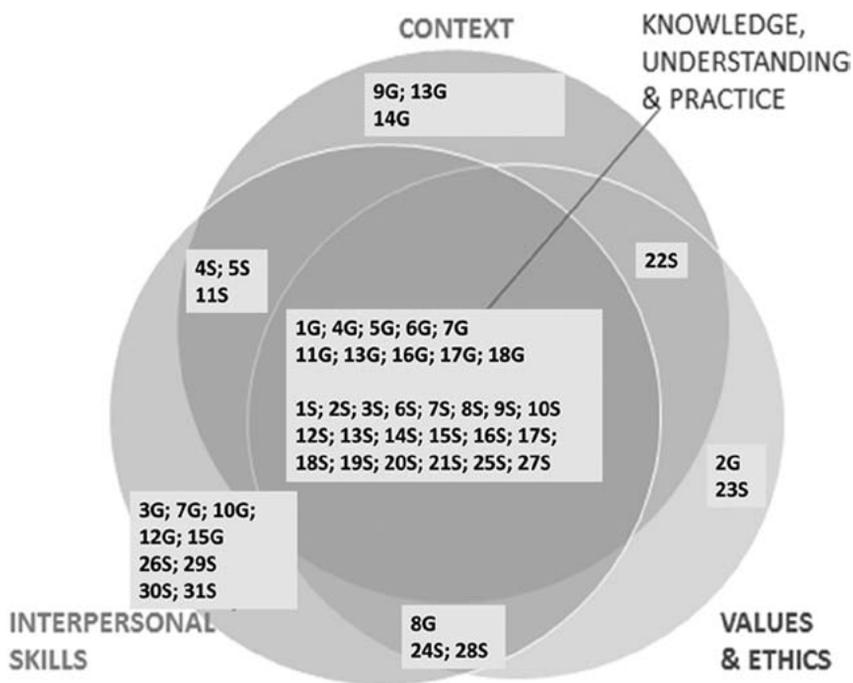

Figure 1
Teacher Education Subject Group "ideal" meta-profile.

While the concept of 'pillars' provides a valuable starting point for establishing the profile of a graduate in Medicine in Africa, it was not felt to reflect either the complexity or the integrated nature of the requirements for a medical graduate that combines academic knowledge and strong understanding of technical competences. All the skills and competences are considered essential and interdependent. Consequently the group sought to represent this in an integrated way with clinical expertise and knowledge at the core. A general concern was raised by the Medicine Group which pointed to insufficient or non-existent assessment of the competences within the meta-profile of the programs.

The Teacher Education Subject Area Group visualized the "ideal" meta-profile in a Venn diagram. The diagram shows the interconnectedness of the four reference clusters (*Context*, *Knowledge/Understanding and Practice*, *Interpersonal Skills*, and *Values and Ethics*) and how both, the specific and generic competences are spread across the integrated referential points: "G" refers to the "generic competences" developed by the entire Tuning group listed in Chapter 6 of this article; "S" refers to the Teacher Education specific competences. A list of these 31 subject-specific competences identified by the SAG Teacher Education can be found in the annex of this article.

The diagram shows that some generic and some subject specific competences are related to all four clusters. However, the ideal meta-profile of Teacher Education Programs should not lead to the conclusion of a prior presence of uniformity. The Teacher Education programmes in Africa seem to be very diverse — even within one and the same country. The intra-country diversity however was reduced in some countries with the introduction of regulatory bodies.

X. Conclusion: Lessons of Experience and Way Forward

The Harmonization and Tuning Higher Education in Africa Pilot Project, an initiative of the African Union Commission and the European Commission has had outcomes of political as well as academic dimensions. Its political impact became visible on different system levels: Continental, regional and national levels. It revitalized the debate on harmonization and raised awareness with regard to the need for curricula reform and quality management as pre-requisite for the achievement of the continental development goals. It stimulated discussions of the intermediary bodies in higher education and it provided an opportunity for close dialogue with professional associations, future employers in the private and public sector.

On the academic dimension, it provided a unique opportunity for 57 African universities, their academic staff, academic administrative officers

(e.g. quality managers, curriculum developers) and the university leadership to discuss across borders on teaching and learning, programs, degree profiles and degrees, the enhancement of quality and credits in their specific disciplines. The Tuning Project hence has created an opportunity for a meaningful dialogue and networking with often delinked stakeholders and isolated debates.

The Tuning group has jointly developed an improved understanding of a graduate's competences that are relevant to a variety of scopes, prominently to the labour market, and thus perceived the reform project as a step towards closing the gap between higher education and the continent's needs. The networking opportunities created by the exercise and the success in achieving a common language and conception with regard to curricula reform can thus be perceived as a small, but relevant step towards harmonization in higher education and the creation of an African academic identity and understanding.

The main achievement of the Tuning Africa pilot project was the development of conceptual frameworks and frames of reference for degree programs in thematic core areas for the sustainable development of Africa, namely in Medicine, Agriculture, Teacher Education, Civil and Mechanical Engineering. The developed academic and professional meta-profiles of the respective programs—based on jointly developed sets of generic competences and catalogues of subject specific competences—are anticipated to ensure a successful integration of a graduate into the African labour market.

The incorporation of distance education into the Tuning methodology was a pioneering experience for the Tuning Team; and it is anticipated that it will enrich the Tuning projects in other regions of the world. It should be however clear that a competence-based design of distance education modules requires an in-depth discussion with the curriculum designers. At this stage, it appears that teaching "online" or "distance" mode of certain generic or subject-specific competences poses a challenge; even more so, the assessment of these competences poses a special challenge. There seems to be a general consensus that a competence and outcome-oriented, student-centred teaching and learning in higher education should consider distance education only as a complementary mode to fill the gaps of face-to-face teaching. The quality guidelines for distance education developed by the African Council for Distance Education (ACDE) may help enrich further endeavours in the Tuning Higher Education in Africa and also consider this mode of teaching in higher education reform efforts.[32]

Harmonization is necessary to strengthen the competitiveness and integration of the continent. However, if harmonization is not flanked by

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[32] African Council for Distance Education (ACDE), http://www.acde-africa.org/.

enhancement of quality of teaching and learning in the African higher education "mass" system, it may have some negative implications on the attractiveness of the academic workplace, the employability of graduates, and an asymmetric flow of "brains" within Africa—leading to the reverse effect of regional integration. Regional integration and reform of higher education efforts should be balanced in developing globally competitive "lighthouses" and regional relevant institutions. Hence, harmonization endeavours must have an external perspective as well as an "internal", continental perspective with quality as common denominator.

Initially, the Tuning Africa initiative was promoted by political convictions of regional integration, mobility, and harmonization. At the launch of the initiative, concerns were raised about ownership, inclusiveness, leadership and strategy. In a direct response to, and accord of the reaction, it was agreed to start the initiative with a feasibility study. The feasibility and later the pilot studies have been instrumental in effectively addressing those issues and concerns.

As the Tuning process needs to involve numerous and diverse stakeholders—such as administrators, ministries, higher education and quality assurance agencies, policy makers, employers and the public sector, students, regional bodies, intermediary actors and university associations—it has become increasingly clear for a close and continuous consultation over a sustained period of time.

A plethora of national and regional quality assurance, accreditation, qualification frameworks, credit accumulation and credit transfer systems, and curricula reforms abound. What remains to be done is to ensure that these efforts are effectively integrated and synchronized to create coherence and consistency.

Implementing harmonization and tuning requires resources. As most African universities experience chronic financial constraints, the provision of resources still has to be negotiated by numerous constituencies. The success of the initiative may also be hampered by the disparate institutional infrastructure and weak human resources base in many institutions.

Tuning still remains a new lexicon in the African higher education landscape. In the "Tuning Africa" pilot project, some five dozen universities were involved—and this comprises a small critical mass of champion universities, along with supporting political and intermediary bodies. Therefore a sound, appropriate and persistent dissemination strategy to popularize the initiative is imperative. For instance, the Tuning Medicine Group has already developed a strategy to disseminate the experiences and results of the pilot project to respective national higher education councils, associations, academic conferences, as well as regional economic communities (RECs) and university associations.

The successful implementation of a paradigm shift from input-oriented teaching to outcome-oriented learning—with all its associated implications to competence assessment and quality assurance—remains a key challenge to "Tuning Africa". The rapid "massification" of higher education, meagre and overstretched resources, poor management and leadership, under-qualified staff and under-prepared students will pose imminent threat to its success. Therefore appropriate, contextualized, and realistic approaches need to be put in place as Tuning Africa is moving forward, into the next expanded phase where the experiences and outcomes so far acquired need to be effectively and widely disseminated. As the dialogue on credits and a common credit system is one of the central pillars of the Tuning approach, the pilot project may play a positive role in advancing the African Credit (Transfer) System.

The methodology of developing profiles and programs of generic and subject specific competences is time intensive. Thus, the pilot phase of 14 months turned out to be a little short to develop the programs in full, for instance, per each study year. The dialogue on competences to be achieved in the different study years, the discussion on teaching methodologies, assessment, work-load based credits and the overall link to the institutional quality management system need further time. The need for a lengthy dialogue in strongly regulated professions with a diverse stakeholder landscape—such as medicine, engineering, and teacher education—are palpable. The systematic involvement of the stakeholders from the public sector (e.g. ministries, regulatory bodies) and the academic sector (e.g. "lead" universities, agencies, networks, academic associations, student bodies, teacher unions) to the private sector (e.g. professional associations and employer associations, industry, organized lobbyists) demand a well-coordinated dialogue that should be strongly supported by the university leadership and encouraged by ministries.

To be sure, designing programs in a learner-centred outcome-oriented way that facilitates employability of graduates—in a fast moving knowledge train—is a complex and demanding process. Guaranteeing relevance can only be achieved if all stakeholders are regularly engaged and consulted in evaluations and reform endeavours. In some disciplines or thematic areas the diversity of the stakeholders make reform efforts even more daunting— necessitating the need for creating a spirit of common values and engagement across numerous stakeholder boundaries.

Policy on continental level is clear, but there is more commitment needed to implement similar initiatives on regional, national and institutional levels. A clear strategy of dissemination for 2014 has been laid out by the main players of the project (AUC, EU, AAU, intermediary bodies and the Tuning Higher

Education in Africa Steering Committee), to help promote sustainability and diffusion of the Tuning methodology. Strong recommendations have been voiced to link and embed other reform efforts, for instance, in quality assurance, accreditation, curriculum development, and the development of (regional) qualification frameworks with the Tuning methodology.

The Tuning Higher Education in Africa pilot project has created an inclusive, effective and systematic consultative process that fostered discourse at grassroots level across borders through a number of meetings, regional seminars and conferences. These will undoubtedly contribute in advancing quality assurance, improvement of teaching and learning, and assessment—and harmonization of higher education in Africa.

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Annex

The Subject Area Group "Teacher Education" identified the following 31 subject-specific competences clustered in the meta-profile given in Chapter 9:

A) *Competences related to Knowledge*

Understanding of

1. The subject(s) to be taught
2. The underlying principles of the foundations of education
3. Pedagogical knowledge of specific subject areas
4. The local and international social, political, economic, cultural and environmental contexts of education
5. National and institutional policies relating to education
6. The language(s) of instruction

B) *Competences related to Educational Practice and Skills*

Ability to

7. Develop schemes of work and teaching plans
8. Select, adapt and use appropriate teaching methods and learning activities
9. Use a range of assessment skills to set, mark and grade learners' achievement
10. Develop and use teaching, learning and assessment materials, including appropriate ICTs
11. Identify and attend to learners' needs
12. Manage learners both inside and outside formal classroom contexts
13. Develop own and learners' entrepreneurial skills
14. Create conducive learning environments that encourage learning
15. Use language appropriately in the classroom and in the subject
16. Conceptualize, analyse situations to solve problems
17. Participate in basic educational research
18. Manage time effectively
19. Critically reflect on their work to improve practice
20. Adapt to change

C) *Competences related to Values and Ethics*

Ability to

21. Care for and support the well-being of all learners

22. Respect socio-cultural diversities (religious, ethnic, linguistic, gender, economic, etc.)
23. Adhere to the rules and regulations of the profession and institution
24. Maintain equity and fairness among learners and promote inclusive education
25. Continuously upgrade their own knowledge and skills
26. Be a role model
27. Inspire self-confidence and appreciation of cultural heritage in learners

D) *Interpersonal competences*

Ability to

28. Be sensitive to the feelings of others
29. Collaborate and network with others, including peers, head teachers, professional groups, and parents
30. Communicate effectively with different audiences and using appropriate tools, including ICTs and relevant forms of discourse
31. Lead and manage groups

Student Workload and Degree Profiles: the experience of CLAR credit in Latin America

Francisco Alarcón, Pablo Beneitone, Roberto de Armas, Sérgio Kieling, Letícia Suñé, and Diana Veneros

Abstract: There is growing consensus in Latin America on the necessity to reorganize the degree profiles in a competence-based and student-centred system, with identified learning outcomes, innovative learning and teaching strategies, and new methodologies for assessing competences which could be useful for students. There is also agreement on the need to build up a solid Latin America Higher Education Area —based on common benchmarks—among which a shared regional academic credit system is highly relevant. Not all Latin American higher education institutions are familiar with an academic credit system. In the countries where academic credits do exist they are generally based on traditional views which focus on teaching and transmission, rest on different concepts and definitions and consider diverse scopes for their application. With few exceptions, these countries do not use a credit system as a unit of measure of student workload to achieve learning outcomes and competences. This paper sheds light on a proposal for a common academic credit system for Latin America (CLAR) which comes out of one of the many nuances of Tuning discussion and is referred to the expected outcome 6: "Political-and educational orientations for the establishment of a system of academic credits for Latin America".[1]

The new credit system that this paper advocates for Latin America is based on the principle that 60 credits measure the workload of a full-time student during one academic year. As such, a CLAR credit is conceived as a unit of value that estimates the student workload, measured in hours, which he/she typically requires to achieve learning outcomes and pass a course or a semester.

In order to calculate the value of CLAR credit two elements are considered: the duration of the academic year and the annual student workload. To estimate the annual student workload, a specific survey was applied in 18 countries, 189 universities and 15 subject areas. This paper shows the major results that were brought out by 10,086 questionnaires, which were responded to by students and university professors. As a result of this survey, the student workload of a full-time study programme in Latin America amounts to around 1,440 to 1,980 hours per year and in those cases one credit stands for around 24 to 33 working hours.

Keywords: student workload; credit system; CLAR; degree profiles; Latin America.

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[1] Proyecto Alfa Tuning América Latina: Innovación Educativa y Social, 2011-2013.

I. **New context, new needs**

The world is undergoing rapid changes due to an unprecedented scientific and technological development which has made familiar the notions of 'society of knowledge' and 'globalization'. In this new context, higher education and universities all over the world face new demands. On the one hand, graduates must comply with new professional standards and confront the ever-changing demands and expectations of global labour markets and societies. It is now widely accepted that an apt, innovative and skilled workforce is a key component of nations' wealth, competitiveness and prosperity. In contrast, graduates' disciplinary knowledge — which has been the main component of a traditional higher education — proves to be insufficient. It is has been argued that a full knowledge acquisition does not necessarily assure the successful application of the same knowledge.[2] Societies require that new professionals also have analytical and reflective skills and the ability to solve in a creative manner conflicts and problems, whether personal or professional. To sum up, new developments have not only led to a different view of knowledge, but also to an increased concern for the acquisition of competences and for a competence based education and training.[3]

A broad definition of competence might conceive it as the capacity that all humans need to solve, in effective and autonomous ways, the problems and situations that arise in their lives. A competence is grounded on a deep knowledge —not only on knowing what and how—but also on knowing how to *be* a person in a complex, changing and competitive world. Another definition suggests that competences are "complex integrated capacities, in different gradations, in which education must train individuals so that they can operate as responsible subjects in different situations and contexts of their social and personal life, knowing how to see, do, act and enjoy properly, assessing alternatives, choosing appropriate strategies and taking responsibility for the decisions taken".[4]

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[2] S.E.M. Everwijn, G.B. Bomers, and J.A. Knuben, "Ability or Competence-Based Education: Bridging the Gap between Knowledge Acquisition and Ability to Apply," *Higher Education* 25, no. 4 (1993): 425-38.

[3] Wim Kouwenhoven, "Competence-Based Curriculum Development in Higher Education: A Globalised Concept?" In *Technology Education and Development,* edited by Aleksandar Lazinica and Carlos Calafate (Vukovar: In-Tech, 2009), http://www.intechopen.com/books/technology-education-and-development/competence-based-curriculum-development-in-higher-education-a-globalised-concept-.

[4] Carlos Cullen, "El Debate Epistemológico de fin de Siglo y su Incidencia en la Determinación de las Competencias Científico Tecnológicas en los Diferentes Niveles de la Educación Formal. Parte II," in *Novedades Educativas N° 62*, Buenos Aires, 1996, http://www.oei.es/n4003.htm.

Gardner, speaking on the notion of multiple intelligences, argues that competences are neither innate nor predetermined.[5] No one is born predestined to develop a specific competence. People, as intelligent beings, are capable of preparing constructions based on the demands from their surroundings, which provide them with multiple different stimuli. They can thus manage to develop specific capacities. People who bring new perspectives to their social as well as to their productive lives are those who are able to identify problems, analyse them, find their "roots", propose solutions and implement them successfully. They count on personal characteristics that allow them to live harmoniously in different environments while preserving their inner balance.

A competence-based education has been deemed apt as a means to instruct individuals so that they can suitably act as proficient, creative and responsible subjects in different situations and contexts of their social, productive and personal life. It has also been considered as a tool to eliminate the barriers that exist between the spheres of daily family life, formal learning, workplace and community. By interlacing a thread between everyday knowledge, academic knowledge, 'know-how' knowledge and scientific knowledge, it is possible to count on a comprehensive education encompassing knowledge (cognitive capacities), abilities (sensory-motor capacities), skills, attitudes and values. The elimination of borders between formally and non-formally acquired knowledge enables the recognition of the value of multiple sources of knowledge, such as personal experience, prior learning in different areas of each person's life, imagination, art and creativity. In the last resort, what an individual should develop in life, and for life, are capacities to increase "know" (savoir) and "know-how" (savoir faire) and to act responsibly, resourcefully and in a collaborative fashion in the community and the workplace (savoir être).

As far as higher education is concerned, it has been stated that it is necessary to bridge the gap between a 'traditional education' — based on disciplinary knowledge and transmission — and a competence-based education required for the new global job market and the new society of knowledge.[6] In general, the dominant transmissional approach does not adequately prepare learners for work, further or higher education, or life in general. It needs to be replaced by a new model based on a student-centred learning approach that

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[5] Howard Gardner, *Inteligencias Múltiples. La Teoría en la Práctica* (Barcelona: Paidós, 1995).

[6] Rodrigo Arocena and Judith Sutz, "Changing Knowledge Production and Latin American Universities," *Research Policy* 30, no. 8 (2001): 1221—34.

moves education from focusing on what academics believe graduates need to know (teacher-focused) to what students need to know and be able to do in varying and complex situations (student and/or workplace focused). In this new model lecturers act as facilitators, study guides help the learners to organize their learning activities as well as to be responsible for their learning achievements, group work complements individual work, and continuous assessment and self-assessment are major features.[7]

How have Latin American universities reacted to this challenge? As in the majority of developing countries, higher education institutions in Latin American are still dominated by the concept and praxis of a 'traditional education' that emphasize the transmission of disciplinary contents and the paramount role of professors inside the classroom. This traditional education tends to focus on what and how learners are taught and less so on whether or not they can use their learning to solve problems, perform procedures, communicate effectively, or make good decisions.

However, higher education institutions are not impermeable to change. The need to face social scrutiny and meet the new productive demands is paving the way for them to reflect upon issues that until now have been taken for granted.

There is in fact a widespread debate which revolves around relevance[8] and quality.[9] As far as relevance is concerned, one of the main issues under discussion is if the training processes actually prepare proficient, reflective and creative professionals and individuals who are able to contribute to their own self-education. Another issue relates to the role of the student and the professor in the classroom and what should be the optimal relationship between them, and how this could contribute to a more effective learning. From this fertile debate which involves psychological, pedagogical, didactic and methodological aspects, a main conclusion emerges: it is necessary to abandon the traditional concept of a teacher-centred education, understood as the transmission and acquisition of content. It is necessary to act with new

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[7] K. Reddy, "The Inclusion of Technology as a Subject in the National Curriculum. A Significant Paradigm Shift for Education in South Africa," MEd thesis, University of Pretoria, 1995. Cited in SPT Malan, "The 'New Paradigm' of Outcomes-Based Education in Perspective," *Tydskrif vir Gesinsekologie en Verbruikerswetenskappe (Journal of Family Ecology and Consumer Sciences)* 28 (2000): 22 - 28.

[8] Luis Enrique Orozco Silva, "Calidad Académica y Relevancia Social de la Educación Superior en América Latina," *Revista Iberoamericana de Educación Superior (RIES)* 1, no. 1 (2010): 24-36.

[9] José J. Brunner, "Aseguramiento de la Calidad y Nuevas Demandas sobre la Educación Superior en América Latina," in *Educación Superior. Desafío Global y Respuesta Nacional*, edited by Luis Enrique Orozco (Bogotá: Universidad de los Andes, 2001).

concepts and with a clear focus on the learning process and its results and on the student.

Yet, if it is true that the need for innovation in the teaching and learning process is paving its own way, there are still many uncertainties about how this may be best achieved. To switch the traditional focus from teaching to learning is not easy since it implies the assumption of new curriculum concepts that should lead and assure an effective learning. Gil[10] highlights three independent factors that influence learning: the student, the professor and the course. As for students, individual characteristics on the intellectual level and the specific skills and values previously developed by him or her explain the different performances observed in diverse educational contexts. Motivation is also a determining factor in the success of learning as well as the study habits displayed by students, including workload, that influence the final result. Furthermore, the professor is a factor that greatly influences learning outcomes: the level of knowledge on the subject, pedagogical and didactic skills, motivation and the ability to structure the learning situation in terms of capacity building of his/her students, are key aspects for achieving the desired learning outcomes. On the role of learning in the course structure, it is obvious that there is a strong relationship between learning and the objectives and organization of a course. Therein lies the concept that guides the implementation of the activities of a course in order to induce learning outcomes. The set curriculum-teaching process is thus the most direct way to accomplish what is central to the university: student learning. When we think of innovative curricula that leads professors to act with a focus on learning and encourage students to use their training in the best way, we must also think of the elements in the curriculum design which will achieve these purposes.

In a student-centred teaching and learning process, and if students are supposed to become effective learners, one of the most important issues to deal with is the time required for them to localize and process the information received, internalize, reflect and construct their own meanings to transform this information into knowledge and mobilize and contextualize this knowledge in simulated situations or practices that permit the consolidation of learning. It is essential to take into account the time spent by students in independent studies along with hours of classroom activities, laboratories, workshops, internships, among others.

Therefore, innovative programs must estimate adequately the workload required for students to achieve the learning outcomes specified in the

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[10] Antonio Carlos Gil, *Didática do Ensino Superior,* 1th ed. (São Paulo: Atlas, 2008).

curriculum. In this sense, the adoption of credits to consider the total amount of student workload — not just associated to formal activities — is a process that actually innovates in the teaching and learning process and induces the implementation of a student-centred curriculum in Latin American universities.

II. Credits and Latin America: a history of disagreements

Until 2012 there was no academic credit system shared by all Latin American countries. Moreover, higher education institutions in the region are still rather unfamiliar with a credit system purported to support curricular change and lead the shift towards a student-centred and competence-based higher education. In the countries where academic credits do exist, they are generally based on traditional views which focus on teaching and transmission, resting on different concepts and definitions and consider diverse scopes for their application.

It is worth noting, for example, that in some Latin American countries where academic credits are in place these have been implicitly conceptualized keeping in mind the teaching process performed by professors in the classroom or in direct contact with students through supervised activities. In practice, the central element of this approach is the professorial workload. Thus, although the definition of credit does not formally declare it, institutions have been using credits as a means to estimate professors' workload and value their salary or fees.

Even though some commonalities exist — especially in Central America — credit definitions and equivalence vary considerably from one country to another in Latin America.[11] Thus one credit can stand for 15 hours, 16 hours, 20 hours, 25 hours, 30 hours, 45 hours, 48 hours, etc. However, the most common situation is a credit that is equivalent to one contact hour per week for 15 or 16 weeks per semester and that for every contact hour estimates independent work of two hours (around 45 and 48 hours per credit).

Despite some differences among countries, and in general terms, the allocation of credits is mostly made taking into consideration classroom work and contact hours. This criterion assigns professors a more active role

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[11] Tuning Latin America Project (Tuning Latin America), "Working Papers — Tuning Latin America Document 2." 2nd General Meeting. Guatemala, 18 — 20 November 2011, http://www.tuningal.org/es/publicaciones/cat_view/42-presentaciones-reunion-guatemala-16-19-nov-2011.

(«teaching») whereas inversely students have a more passive one («listening and receiving") in a master class or tutorial session). Practical activities for students such as laboratories, workshops and field activities are utterly undervalued —even more than independent student work (home study, research, internships, etc.). It is common that 1 contact hour per week is required to achieve 1 credit but at least 2 or 3 hours per week of practical work and activities (laboratories, workshops, fieldwork) to obtain the same credit.

In the countries where students' independent work is prized, a credit's value is estimated arbitrarily on the basis of time spent by students in contact hours. As already mentioned, the criterion being used assumes that for every hour of classroom work the student should spend two hours doing independent work. It is well known that this relationship is not based on theories or field studies. Yet, as it stands as a reasonable and convenient assumption it has been widely accepted.

In short, the conceptualization and definition of an academic credit in Latin American countries (except in Chile[12]), has not been associated with either an estimation of total student workload (measured in hours) or to a fixed number of credits per year. As for its value, this has been generally allocated in accord with the type of academic activity done by students or with them instead.

III. Tuning in Latin America[13]: a contribution to the curriculum modernization

As in other developing regions, Latin American higher education institutions have initiated a transition from a traditional teaching-centred approach based on the transmission and acquisition of contents towards a new approach focused on the learning process, learners' needs and expectations and students' ability to learn. There is also a growing consensus on the necessity to reorganize the degree profiles in accord with this student-centred, competence-based system, with identified learning outcomes, innovative learning and teaching strategies, and comprehensive methodologies to assess learning outcomes and competences.

Since its inception in 2004, the Tuning Latin America project has sought to contribute significantly to the innovation of higher education systems in

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[12] Consejo de Rectores de Universidades Chilenas (CRUCH), *Guía Práctica para la Instalación del Sistema de Créditos Académicos Transferibles (SCT-Chile)* (Santiago de Chile: MECESUP, 2007).

[13] Tuning Latin America website: http://www.tuningal.org/

the region, creating tools and capabilities to support and facilitate this transition while contributing to establish the landmarks for the construction of a higher education common area in Latin American. This construction involves the need to establish common benchmarks, among which the definition of a shared academic credit for Latin America is relevant.

However, as the academic credit systems in place in Latin American higher education institutions are diverse and mostly linked to a traditional view of education focused on teaching and transmission of contents, it does not seem appropriate and sufficient to promote harmonization from the existing concepts and practices.

The Tuning project, focused on generic and specific competences and learning outcomes has shown that approaches to learning, teaching and assessment significantly affect the work that students need to do in order to achieve the desired learning outcomes; hence it also affects how they measure themselves. Student workload, teaching methods and competences and learning outcomes are all clearly interrelated. Nevertheless, other factors also have an influence, such as the diversity of university cultures and educational traditions, design of the study plan, consistency of the study programmes, organisation of teaching, and the capacity and attitude of the students. In other words, the time that students require in order to achieve the same competences and learning outcomes may substantially vary depending on the particular context in which this process takes place.[14] It is therefore important to establish a baseline credit system that enables the measurement of this time and its recognition.

Given the need to reflect in context on the time that students require in order to achieve competences and learning outcomes, the Tuning Latin America project in its second phase (2011-2013) led an extensive study in 15 subject areas (Agronomy, Architecture, Business, Chemistry, Computer Sciences, Civil Engineering, Education, Geology, History, Law, Nursing, Mathematics, Medicine, Physics, and Psychology). This study was developed in 189 universities from 18 Latin American countries (Argentina, Bolivia, Brazil, Costa Rica, Colombia, Cuba, Chile, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Mexico, Panama, Paraguay, Peru, Venezuela and Uruguay). Between November 2011 and March 2012, a large survey labelled "Estimating Latin American Student Workload, from the perspective of professors and students" was conducted. It aimed to provide an overview of the total workload (in hours) that a student needs in

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14   Pablo Beneitone et al., eds., *Reflexiones y Perspectivas de la Educación Superior en América Latina. Informe Final —Proyecto Tuning—América Latina. 2004 — 2007* (Bilbao: University of Deusto and University of Groningen, 2007), 293.

order to pass the courses provided in these 15 subject areas. The survey was based on both the perceptions of what professors and students consider as the time required for, or spent on, the acquisition of learning outcomes in the related courses. A total of 10,086 questionnaires were collected. As its major result, the survey provided a fair estimate of the annual workload of Latin American students.

It is worth noting that the estimation of student workload was not based on contact hours only (i.e. hours spent by students on activities guided by teaching staff). It embraced all the learning activities required to achieve the expected learning outcomes, including the time spent on independent work (seminar or laboratory work; collection and selection of relevant material; study of the material; writing of papers/projects/dissertation; practical work, among other activities) and the preparation for assessment as well as the time necessary to undergo the assessment procedure.

According to the responses of students and professors, the total time required for students to meet the demands of an academic year (including contact and non-contact hours) is, on average, 1,247 hours per academic year. The survey showed however a significant variation among countries which fluctuated between 921 and 1,646 hours per year. In most of Latin American higher education institutions (12) student workload ranges from 1,200 to 1,400 hours per academic year. Table 1 shows the estimated student workload by country of origin.

As seen, in Latin America, the length of the academic year differs from one country to another and, in some countries, even from one university to another. Its duration, as said before, comprises the number of hours dedicated to classwork, the number of weeks dedicated to independent study and field work, the time to prepare tests and exams, and the number of weeks to carry out examination procedures. All these elements amount to the specific length of the academic period, information that can be used to draw a comparison by discipline and/or country.

This estimation of the academic year takes also into account the vacation periods, when students are expected to continue working and preparing assessments, projects and dissertations. In most of Latin American higher education institutions the length of the academic semester ranges from 16 to 20 weeks. To have an annual perspective of this length it is necessary to double these figures.

An estimation of the annual student workload by subject area (Table 2) also shows a significant annual variability ranging from 861 hours in Law to 1,589 hours in Architecture. Again, in the majority of the subject areas (9) the student workload ranges from 1,200 to 1,400 hours per academic year.

Table 1

Estimated student workload by country of origin

	Estimation of professors on the total workload of one semester (in hours)	Estimation of students on the total workload of one semester (in hours)	Average on the estimations of professors and students on the total workload of a semester (in hours)	Average on the estimations of professors and students on the total workload of an academic year (in hours)
Nicaragua	624.25	296.76	460.51	921.01
Honduras	457.35	479.62	468.49	936.97
Panama	564.5	443.17	503.84	1007.67
Chile	613.81	497.2	555.51	1111.01
Bolivia	602.6	574.74	588.67	1177.34
Venezuela	473.39	727.06	600.23	1200.45
Peru	612.67	605	608.84	1217.67
Brazil	650.13	570.42	610.28	1220.55
Uruguay	574.27	679.76	627.02	1254.03
Guatemala	586.89	682.21	634.55	1269.1
Paraguay	599.5	709	654.25	1308.5
Costa Rica	667.92	658.84	663.38	1326.76
Mexico	603.63	730.01	666.82	1333.64
Ecuador	694.25	650.2	672.23	1344.45
Colombia	683.14	673.33	678.24	1356.47
El Salvador	783	604.86	693.93	1387.86
Argentina	740.57	697.47	719.02	1438.04
Cuba	932.06	714.87	823.47	1646.93

Source: Tuning Latin America project.

Table 2

Estimated student workload by subject area

	Estimation of professors on the total workload of one semester (in hours)	Estimation of students on the total workload of one semester (in hours)	Average on the estimations of professors and students on the total workload of a semester (in hours)	Average on the estimations of professors and students on the total workload of an academic year (in hours)
Law	425.59	435.54	430.57	861.13
Psychology	545.47	463.05	504.26	1008.52
Nursing	597.43	423.71	510.57	1021.14
History	560	515.43	537.72	1075.43
Education	575.86	509.82	542.84	1085.68
Business	681.1	529.08	605.09	1210.18
Mathematics	525.25	753.39	639.32	1278.64
Agricultural Sciences	677.41	623.58	650.5	1300.99
Information Technology	663.73	690.56	677.15	1354.29
Physics	683	679.46	681.23	1362.46
Chemistry	676.8	692.15	684.48	1368.95
Civil Engineering	695.51	689.97	692.74	1385.48
Geology	743.71	646.36	695.04	1390.07
Medicine	606.33	807.7	707.02	1414.03
Architecture	871.63	718.31	794.97	1589.94

Source: Tuning Latin America project.

The collected data also provide information on the so perceived student workload per week, which could mean a step closer to the overall calculation.

Besides, it was also found that there is a wide variability in the duration in weeks of the academic year by country. This variation ranges from 32 to 40 weeks depending on the country. Thus, Table 3 consolidates the average estimation of professors and students in each subject area over the total student workload per week (including contact hours as well independent activities). The average weekly student workload would be 50 hours.

Table 3

Estimated student workload per week by subject area

	Average on the estimations of professors and students on the total workload per week (in hours)
Law	39.87
Business	42.26
Geology	43.64
Chemistry	46.34
Psychology	46.71
Physics	49.58
Civil Engineering	50.94
Agricultural Sciences	51.01
History	52.12
Information Technology	52.26
Mathematics	53.8
Nursing	53.93
Education	55.93
Architecture	57.56
Medicine	59.12

Source: Tuning Latin America project.

There are other important features that need to be looked at when reflecting on the student workload. As already said, a large number of interrelated factors are involved in the achievement of the desired learning outcomes. These are not restricted to the number of student work hours and to the student's intelligence and speed, but also include the teaching and learning methods. It makes a great difference when teaching is organised into smaller groups as opposed to its organisation into larger ones. It does also

make a difference depending on the type of learning activity in which the student is involved (contact classes, seminars, practical courses or practical exercises). Moreover, the existence or non existence of a system of tutorials might influence the learning outcomes.

The study emphasizes the estimation of non-contact time that students require to meet academic obligations and on the learning activities they should or actually develop in order to attain learning outcomes (readings, field work, exam preparation, virtual activities, etc.). Collected data (Figure 1) show that both professors and students respond positively (over 80%) to the topic if they did reading activities in the non-contact time. However, in analysing this element in detail, it is worth noting that reading activity is more valued by professors than students. In almost all areas the professors' perception of this activity has a higher percentage of affirmative responses. In some cases, professor´s perception doubles that of the student´s (Business, Architecture, Education).
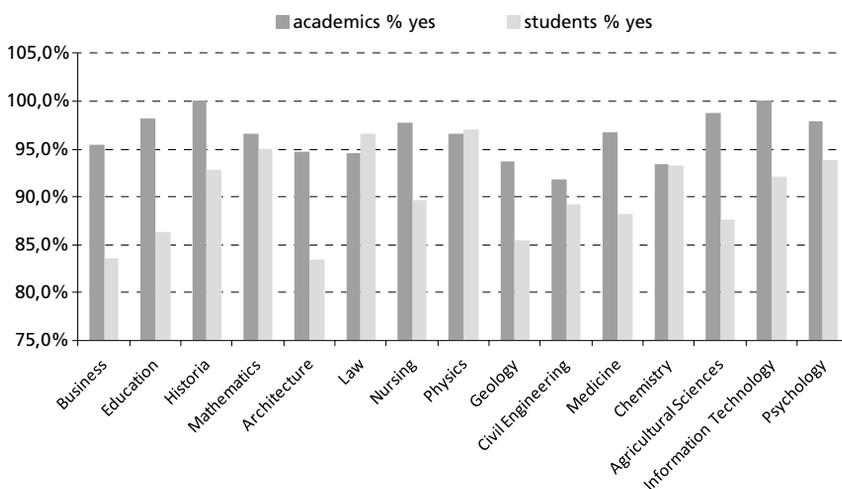

Figure 1

Percentage of positive responses from students and professors about reading activities at non-contact time by subject area.

Comparatively, when asked if they did virtual activities (chat, virtual classroom, forum, etc.) in non-contact time, the positive responses from both students and professors descend significantly (Figure 2).
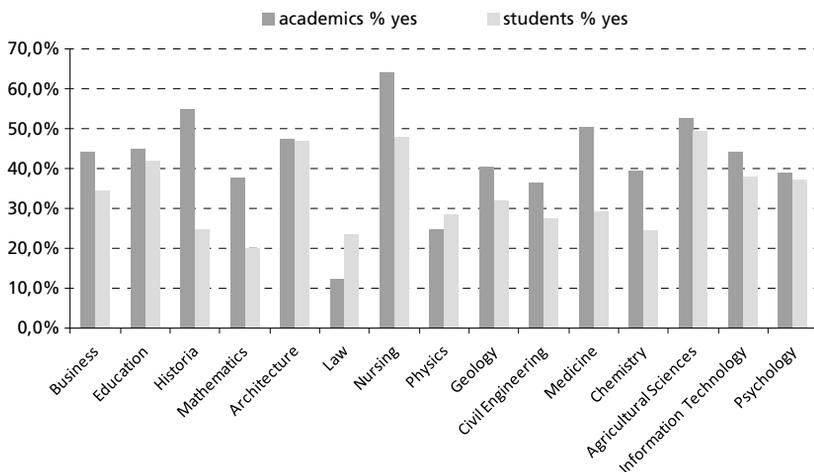
Figure 2

Percentage of positive responses from students and professors about virtual activities at non contact time by subject area.

The survey also questioned students and professors about the existence of planning associated with non-contact work time. The answers again show a significant gap between the perception of professors and students (Figure 3). In most subject areas, professors state that they planned non-contact hours student workload. Students, however, do not acknowledge to have planned, in an autonomous fashion, learning activities to be done outside the classroom environment.

Figure 4 makes clear that despite manifest positively planning, as seen in the responses, there seems to be no significant contrast between that planning and the real time that students require to perform the learning activities.

This study on Latin American student workload is meaningful. It signifies a fundamental discussion base for the subsequent definition and implementation of a reference credit system for the region. One of the main conclusions that can be drawn from it is that the rich diversity of its results —as seen in the differences between countries— does not inhibit the suggestion of a shared approach to measure student workload throughout Latin America. The resulting proposal emphasizes on a common and flexible approach which, while respecting existing Latin American higher education diversity and local and national autonomy, can facilitate curricular change and innovation, provide greater accountability, and build linkages between the different higher education systems at a regional level.
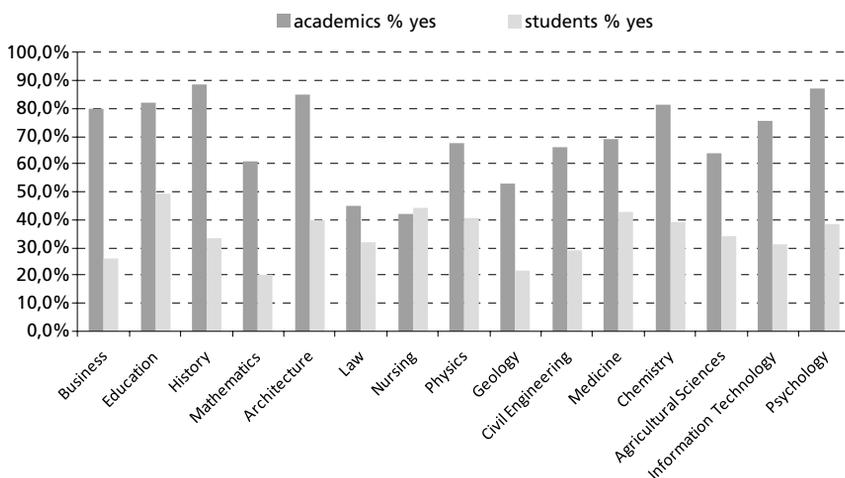
Figure 3

Percentage of positive responses from students and professors about preparing academic work plan by subject area.
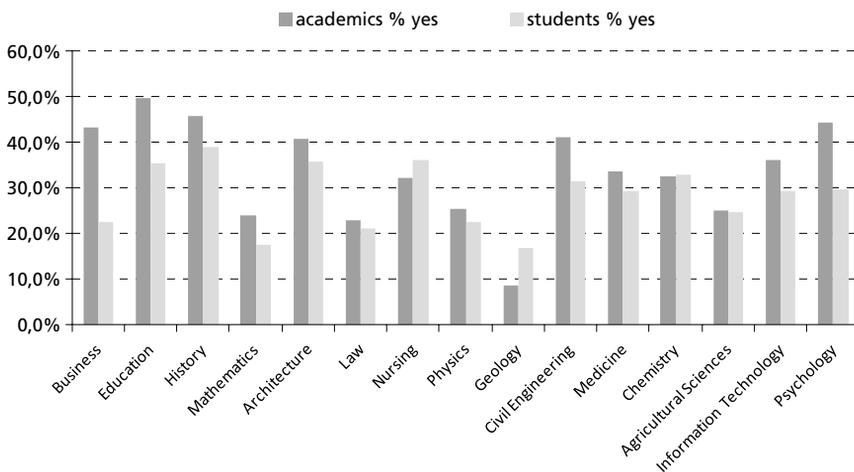

Figure 4

Have you contrasted the academic work plan with your professor/ students? by subject area.

IV. **The Latin American Reference Credit**
     (CLAR — *Crédito Latinoamericano de Referencia*)

The Tuning Latin America project began discussing the need for an academic credit system at the regional level ever since the first phase of its development (2004-2007). These discussions were initially developed at the level of the National Tuning Centres[15] and led to agreements embodied in the Tuning Final Report 2004-2007. These determined that the future Latin American Credit should include the total student workload to obtain the expected learning outcomes. A system of this nature should be based on the correlation of a number of elements:

— The degree profile, which sets out the competences to be developed.
— The level and existing admission requirements.
— The learning outcomes specified for each module/section/course.
— The educational activities that best ensure that the learning outcomes will be achieved.
— The types of assessment considered most appropriate for the learning outcomes.
— The time (measured in hours), based on the student workload, which on average will be needed to perform the educational activities that are necessary for achieving the learning outcomes (Beneitone, 2007).[16]

In the second phase of Tuning Latin America Project (2011-2013), the commitment to move forward and create a credit system for the region has been much more concrete. The new phase of the project in fact focuses on the role of student workload, and seeks to stress its relationship with competences and learning outcomes.

Unlike other proposals, CLAR credit has been born out of the importance of disseminating and promoting a curricular paradigm shift in Latin American higher education institutions and of the necessity to assure the quality of

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[15] Tuning Latin America project has encouraged the setting up of National Tuning Centres in each of the Latin American countries involved in the project with the aim of promoting the participation of universities that cannot be directly involved in it. These centres are led by officials responsible for higher education issues in their respective countries, or by members of national quality assurance agencies, higher education authorities (Rectors, Vice-rectors), or professional/student/university associations etc. These centres must link the Tuning project with others nationally, and provide Tuning Project with the information about national education systems that the project may demand.

[16] Pablo Beneitone et al., eds., *Reflexiones y Perspectivas de la Educación Superior en América Latina*, 292.

programs of professional training while encouraging mobility of students at a regional level. Without restricting complementary goals, CLAR credit´s main objectives are:

— Encourage the development of a curriculum reform that considers the credit system as an improvement of a degree profile focused on student-centred learning and as a recognition factor of the accumulation of academic work.
— Promote the quality of the professional training process. Despite CLAR not being responsible for quality assurance, a credit system well designed and balanced and with a clear connection to competences and degree profiles should positively affect and increase quality.
— Facilitate mobility of students from country to country in Latin America from a common recognition of the student's academic work.

In a complementary perspective, CLAR credit seeks to represent the relative complexity of the various curricular components and facilitate the evaluation and comparison of learning outcomes in different contexts of qualifications, programs and learning environments. It also seeks to provide a method for comparing shared learning among different academic programs, sectors, regions and countries.

As for its concept, CLAR credit is conceived as a unit of value that estimates the amount of work measured in hours that a student requires to achieve learning outcomes and pass a course or a semester.[17] Generally speaking, a learning outcome describes what a student should know, understand and be able to do after successful completion of a process of learning.

CLAR credit is based on the principle that 60 credits measure the workload of a full-time student during one academic year.[18] The use of this normalizer was adopted at the Second General Meeting of Tuning Latin America project, taking into account:

a) Its divisible character, which allows for an easy adjustment to different modalities of organization of the academic year (semester, quarter, trimester, modules, etc.).
b) Its compatible character. There are affinities between CLAR credit and other credit systems that are widely used in other regions of the world.[19]

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[17] Tuning Latin America Project (Tuning Latin America), *CLAR. Latin American Reference Credit* (Bilbao: University of Deusto, 2013).

[18] Agreements reached at the Second General Meeting — Tuning Latin America Project - Guatemala, 18 — 20 November 2011.

[19] 60 credits per year is used in Europe (ECTS) and in Asia (ACTS)

c) If as a rule one full time academic year is equivalent to 60 credits, a semester is equivalent to 30 credits. Thus, a four-year degree programme, according to this CLAR credit proposal, is equal to 240 credits, a five-year programme amounts to 300 credits, and six years to 360 credits — in accordance with the reality of courses and degree programmes in different countries.

For the purposes of calculating the value of CLAR credit, two elements have been considered: the duration of the academic year and the annual student workload.

1) *The duration of the academic year:* This is one of the main factors that influence the volume of annual student workload and help determine the value of a credit. As demonstrated by the "Estimation Study in Latin America", the duration of one academic year may vary from country to country and even change in the same country from one institution to the other. In the first phase of Tuning Latin America, and based on the data provided by the National Tuning Centres, the Fourth General Meeting of the Project (Brussels, June 2006) concluded that in the majority of higher education institutions in Latin America the length of the academic year ranged from 32 to 40 weeks. This finding was supported in the study mentioned before, which was conducted between November 2011 and March 2012.

To calculate CLAR credit, 36 weeks —corresponding to the midpoint of the interval detected between 32 and 40 weeks— was considered as a reference figure.

2) *The annual student workload.* The volume of time, measured in hours, that a student requires to reach the expected learning outcomes and develop the competences stated in the programme profile, also exhibits a large dispersion and variability in Latin America, among countries and within. The number of hours that students need to achieve learning outcomes is variable and depends — as previously stated — on individual skills, experience and training of lecturers, methods and approaches of teaching, learning and assessment developed, nature and consistency of the curriculum, the quality of the organization, the availability of learning resources, institutional traditions at a national and regional level, etc.

In the definition of CLAR credit student workload is central. The weekly student workload in Latin America ranges from 40 to 55 hours, as established by the results provided by the study on "Estimating student workload in Latin America". Ascribing a longer weekly volume to student workload is not only unrealistic but ignores the hours of leisure, rest, and dedication to other activities and social interactions that the students deem important.

Considering the length of the academic year — 36 weeks a year — and the range of weekly student working hours (40-55 hours), the annual student workload would range from 1,440 to 1,980 hours.

Weeks a year	Student Workload per week	Student Workload per year
36 weeks	40 hours	1440 hours
36 weeks	55 hours	1980 hours

The above figures lead to a CLAR credit whose value is to fluctuate according to the following estimation:

$$(1,440 \text{ hrs.} / \text{Year}): (60 \text{ credits} / \text{year}) = 24 \text{ hrs.} / \text{Credit}$$
$$(1,980 \text{ hrs.} / \text{Year}): (60 \text{ credits} / \text{year}) = 33 \text{ hrs.} / \text{Credit}$$

Therefore a CLAR credit has no unique temporal value. Its value ranges from 24 to 33 hours.

In those countries where the academic year has a length different from 36 weeks, the number of weekly student working hours will vary. Yet, this difference will not alter the annual operating range defined in Table above (1,440-1,980). Any variation in the number of weeks, and in the number of working hours per week, must respect the range established so as to avoid excessive variability in CLAR credit.

V. **Some conclusions**

There is clear evidence from recent social, economic and political movements in Latin American that our societies need educated citizens to face the challenges posed by the present as well as the future. Our countries need to direct their own destinies wisely and satisfactorily and to assume the role they need to play in pursue of cultural, intellectual and productive development. Given their role in society, universities are the best-equipped organisations to play a key function in designing and implementing suitable strategies for achieving these goals. They have the mission, and above all, the basic responsibility to use their knowledge, their tradition and their capacity in favour of development and innovation.

In this new context, students have to take an active part in building their own learning so that they can act individually as well as collectively in the construction of the future. Yet, close to the new student should be the new professor, the one who provides the resources (information,

methods, tools), design creative learning environments and assists and motivates students throughout the entire learning process. The inspirational professor should become a ubiquitous representation of a paradigm shift, enabling processes of students' human development and acting as a methodological advisor and facilitator. In this new proposal the reflection on student workload is fundamental to students' effective learning and to their proper growth as responsible, capable, resourceful and moral human beings.

CLAR credit can help to focus on the students and on the quality and relevance of competences that must be developed for their proper integration into society. It can also facilitate the measurement of actual hours used by the students and promote reflection on the type of learning activities that they require to achieve learning outcomes and develop their skills in a particular degree programme. As an accumulation system, CLAR credit can not only facilitate recognition procedures but also open the possibility for flexible learning paths and thus facilitate access to higher education for non-traditional learners. By promoting a system of recognition and development of the quality of academic work, CLAR credit will encourage curricular innovation and continuous improvement of the quality of programs in national systems.

The use of CLAR credit as a transfer as well as an accumulation system will also contribute to the building of a common higher education area in Latin America. A credit system of this kind will be beneficial for achieving more transparency and compatibility between different national educational structures and facilitate students' transit and mobility from one country to another by bringing greater efficiency in the process of academic recognition of courses taken in mobility experiences. It is assumed also that CLAR credit will not only permit students' mobility between Latin American countries and also a fertile dialogue with other international higher education systems existing in Europe, North America, Asia, Africa and Australia.

Further, CLAR credit's greater impact lies in the possibility that by defining — through its application — a higher education common space, a greater understanding, collaboration and integration in Latin America will be put in place. This, in turn, will help to create a culture of friendship and peace among countries linked together by common cultural and historical backgrounds and entwined by shared interests and aspirations.

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Adapting the Tuning Programme Profiles to the Needs of Russian Higher Education

Yevgeniya V. Karavayeva and Yelena N. Kovtun

Abstract: This article considers how TUNING-compatible programme profiles could be developed in the Russian Federation in the context of: on-going reform of the higher education; introduction of the new generation of Federal State Educational Standards (FSES); development of the new professional standards; implementation of a system of public accreditation of educational programmes; and a complex system of educational quality assessment.

It also analyses the results of monitoring of the effectiveness of FSES implementation in the system of Russian higher education by the Association of the Classical Universities of Russia (ACUR) that identified a number of problems in the area of programme design and implementation related to drawbacks within the current FSES.

Based on the experience gained during the implementation of the TUNING RUSSIA Project (2010-2013), this article demonstrates the usefulness of the TUNING basic principles and approaches and suggests the ways TUNING profile development methodology might be successfully adapted and applied for designing educational programmes in the course of the Russian higher education reform.

Creating TUNING-model degree profiles may be crucial to aid the Russian higher education institutions in the development of the new educational programs. Brief but all-encompassing formulation of the aims and outcomes and specific characteristics of an educational programme, listing competences and learning outcomes could permit higher education institutions to move from trying to comply with standards and requirements, which are sent from above but are foreign to the institutions themselves, to adopting the principle of transparency and designing better and more competitive degrees.

Keywords*:* Bologna process; higher education reform in Russia; TUNING-compatible programme profiles.

I. Introduction

The methodology for design and implementation of educational programmes developed within the framework of the Tuning Educational Structures in Europe — the TUNING international project is gradually becoming the leading approach within the common European education space that is consistent with the Bologna Process principles. The major attractions

of this methodology are the clarity of its basic principles (development of a suitable "meta-language" of international education), the clear and logical description of educational processes and its ability to account for and reconcile the educational models of different countries through advocating a common approach to defining aims, techniques and outcomes.

The core principles of the TUNING methodology and its most evident contribution towards enhancing education consists in bringing together competence-based education and transparent educational outcomes (making these comprehensible for all the stakeholders). Thus, higher education institutions are expected to formulate their educational goals in a succinct and precise way; employers are invited to select recent graduates as potential employees in a conscious and objective manner and to plan better their future professional development; while the students themselves are encouraged to become pro-active in terms of determining their educational needs and preparing for their desired employment.

The quintessence of this approach resides in the so called Profiles (specifications) of educational programmes. A perfect implementation of the TUNING philosophy, these contain an exhaustive description of educational aims and outcomes, which, in turn, locate each educational programme within the context of other programmes both within a country and internationally. The Profiles explain what each graduate will learn and how and at what level these elements will be taught (according to the international educational programmes' indexes, and to the national and international qualification frameworks). There is no doubt that such Profiles will be introduced in some manner by all the members of the Bologna Process. Yet, it is equally clear that each participant country needs to develop Profiles compatible with the existing national educational system and that in order to implement this practice certain country-specific obstacles will need to be overcome.

This article considers how TUNING-compatible programme Profiles could be developed within the Russian Federation framework of higher education.

II. **Historical Context**

Russian higher education degrees have traditionally provided a broad foundational (fundamental) rather than narrow practice-oriented professional training.

After the Soviet Union collapsed the Russian Federation introduced state educational standards (SESs) aimed at unification of the content of educational programs at all of the higher education institutions (HEIs).

The first "generation" of the SESs was introduced in late 1990s and does not practically allow HEIs any freedom in designing educational programs. The second "generation" of the SESs introduced in 2000 allowed HEIs to suggest up to 20% of the educational program content. SESs-1 and SESs-2 set "minimal" requirements for the content of educational programs and determined a fixed list of mandatory disciplines (subjects) along with the number of teaching hours allocated for those disciplines.

Russia joined the Bologna Process in 2003 and a number of measures have been taken since then in order to ensure terminological, normative and content-related compatibility of the Russian educational model with European practice. The classification of areas and programmes of studies has been revised, new-generation educational standards have been developed, professional standards are being developed, a system of public accreditation of educational programmes and a complex system of educational quality assessment are being implemented.

The core principles of programme design and implementation reflected in the new normative and methodological documents have been informed by, among others, the TUNING approach. Thus, Federal State Educational Standards (FSES), incorporating the employers' opinions and approved in 2010-2011, speak of the competence approach, learning-outcome orientation as well as of calculating students' workload in credit units, and also mention the possibility of introducing a modular principle of curriculum design.[1] New standards do not set rigid requirements for the content of educational programs, therefore, providing HEIs with more freedom in designing educational programs.

During the last 2-3 years, Russian higher education institutions (HEIs) have (re)designed and implemented educational programmes following FSES guidelines.

III. The Monitoring Project

These new programmes are commonly referred to as core educational programmes (CEPs). In 2011-2012, the Association of the Classical Universities of Russia (ACUR), commissioned by the Ministry of Education and Science of the Russian Federation, has started monitoring the effectiveness of FSES implementation into the system of Russian higher education. This *Monitoring* project will continue in 2013 and is expected to focus on

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[1] See more in: Baydenko V.I., Designing federal state educational standards of higher professional education: a pilot educational program. Moscow, 2007.

analysing CEPs, among other things. ACUR experts are evaluating how well CEPs meet the requirements not only of FSES but also of the basic principles of the Bologna Process, including the major points of the TUNING methodology.[2]

The questionnaires administered within the *Monitoring* project to different categories of HEIs' employees have revealed a certain level of familiarity with the TUNING methodology. E.g., for the question "What was the priority method of determining additional competences to be developed by the CEP graduate?" 12.5% of respondents said that relevant TUNING subject-area-specific recommendations were taken into account. At the same time, 38.8% responded positively when asked whether *Tuning Educational Structures in Europe* international project methodology had been used by their HEI for designing CEPs.

This relatively high level of familiarity is not surprising. Some Russian HEIs first used the TUNING methodology back in 2006-2007. The Higher School of Economics, the People's Friendship University of Russia and Tomsk State University were the pioneers. Within the framework of *Tuning Educational Programmes in Russian HEIs* TEMPUS project, these HEIs used the TUNING methodology to design Bachelor and Master programmes in European Studies and Applied Mathematics. In 2007-2008, another Tempus project — A Russian Tuning-ECTS based-model for the Implementation of the Bologna Process in Human Sciences (RHUSTE) — was carried out. As an outcome, educational programmes in History and Culture Studies were developed for different levels.[3] Finally, since 2010 a number of Russian HEIs have been working together in a new Tempus project: *Tuning Russia*. The project's aims and objectives are further discussed below.

However, it must be admitted that the assumed familiarity with TUNING methodology was disproved by the analysis of the CEPs' documentation by monitoring ACUR subject area experts. These experts had to conclude that while the competence and credit-based approach to CEP design was observed formally (thus, complying with FSES requirements), HEIs usually had a poor understanding of what this approach entailed and often did not observe the

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[2] More details on monitoring project and on its interim results see in: - The experience of implementing federal state educational standards by professional education institutions of the Volga federal district (Saratov, 29-30 October 2012). Saratov: Saratov University Publishing House, 2012.

[3] Kovtun, Y.N., ed., Model of creating core educational programs in humanities based on TUNING-ECTS methodology for the implementation of the principles of Bologna process in Russia. History and Culturology. Chelyabinsk, 2008.

sequence and logic of the TUNING step-by-step model for designing educational programmes.[4]

The Tuning model comprises the following steps:

— Confirm the existing social need for the programme and define the programme profile;
— Describe programme objectives and identify the key competences (generic and subject-specific) it should develop;
— Identify and formulate measurable learning outcomes that should demonstrate that the graduate has developed the competences;
— Design and describe the programme contents and structure (modules and credits);
— Check the correspondence among the programme structure, the learning outcomes and the key competences;
— Select approaches to teaching and learning as well as methods of assessment in line with the competences to be developed;
— Develop an evaluation and quality assessment system.

The monitoring experts checked whether the educational programme documentation of the Russian HEIs reflected the following:

— CEP mission statement - a general description of professional and personal qualities of a graduate, information on the areas of professional activity and on the economy sectors where the demand for such specialists is expected;
— Competences to be developed by the CEP graduate (primarily those in addition to the core competences already listed in FSES);
— Methodological support through teaching and learning techniques and a system of quality assurance to make sure students complete the CEP successfully (including materials and recommendations for continuous and interim evaluation);
— Requirements for the final state examination;
— Evidence of HEI's cooperation with employers in developing the CEP.

Special attention was paid to the mission statement because the task of comprehending and formulating the mission statement is key to the whole process of programme design. The aim is to define the graduate's profile in

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[4] Results of the review of educational programs of Russian HEIs within the framework of the "Monitoring" project are described in: Kovtun, Y.N., Results of the review of the core educational programs of HEIs, developed in accordance with the FSES: analytical report for informational-methodological seminars for HEIs. Saratov: Saratov University Publishing House, 2012.

accordance with the academic specialisation of the university and with the labour market requirements. This statement determines the competences to be developed and, therefore, the disciplines and internships that should build up the programme. ACUR experts assessed whether the future areas of the graduates' professional activity were formulated correctly and with due detail; whether the graduate's profile was specified; and whether the mission statement matched the labour market demands.

The majority of the monitoring experts had to conclude that CEPs analysed do no more than mechanically reproduce fragments of relevant sections of FSES and/or of Sample CEPs (SCEPs) designed by FSES authors. The experts observed: "None of CEPs examined pointed out how the graduate's qualifications match the regional/country-level labour market demands"; "Aims are normally formulated at a very abstract level and literally reproduce SCEPs' aims"; "Programme designers tried to follow FSES guidelines as much as possible and demonstrate their own initiative as little as possible"; "Missions in the majority of HEIs are formulated in an abstract way, without taking into account regional labour market characteristics and profile"; "CEP aim is formulated in very general terms"; "In the majority of CEPs the aim (mission) is formulated in an abstract manner and has no practical value, for example 'The aim (mission) of the present BA CEP is to equip students — future Bachelors — ... with common cultural, professional and subject-specific competences in accordance with the FSES requirements and SCEPs' recommendations' or 'BA CEP aims at developing students' personal qualities as well as common cultural (universal) and professional competences in accordance with FSES requirements'".

The experts stated that such a formalistic approach to specifying educational aims leads to the absence of a coherent graduate's profile, resulting in both students and employers being unable to identify the specific features of a particular educational programme and to compare CEPs of various HEIs within one country, not to mention international programme comparison.

A similar formal approach was identified by the experts when analysing the competences graduates were expected to develop. In the majority of cases, programme designers simply copied the competence lists contained in FSES or SCEPs. Additional competences are very rarely added and do not contribute to the programme's specificity. There was also hardly any evidence that relevant employers were consulted in order to identify these additional competences. As a result, there was no clear link between the list of competences and the expected learning outcomes. Finally, this resulted in a lack of recommendations about ways to achieve the desired learning outcomes (in terms of disciplines, internships, continuous and interim evaluation, or even in terms of final evaluation procedures).

Therefore, it is clear that when designing CEPs Russian HEIs pay insufficient attention to the first three steps of the TUNING model:

— Confirm the existing social need for the programme and define the programme profile;
— Describe programme objectives and identify the key competences (generic and subject-specific) it should develop;
— Identify and formulate measurable learning outcomes that should demonstrate that the graduate has developed the competences.

This inevitably detracted from the logic of CEP design, led to the absence of clearly stated aims and objectives of a CEP and to the question of labour market demands for the graduates of a specific profile being ignored. The curricula, then, did not match the competences listed, while the competences (despite occasional excessive level of detail) often did not sum up to a coherent and labour-market-tailored profile.

One could attribute these drawbacks to the fact that Russia is just making the first steps towards bringing its national educational space in line with the European one. Nonetheless, disregarding such problems might nullify the positive effect expected of the current Russian higher education reform initiatives. Indeed, if HEIs consider the current reform to be no more than another bureaucratic top-down campaign, the Russian higher education programmes can hardly aspire to ever become compatible and comparable with those of Europe.

On the other hand, not all the fault lies with Russian HEIs. Russian statutory documents, including the education law, are often vague or imprecise. Thus, the definition of a CEP in both *On Education* and *On Higher and Post-University Professional Education* laws[5] goes as follows: "Core education programme of the higher professional education shall implement the federal state educational standard in accordance with the type of higher education institution, and educational needs and demands of students; it comprises curriculum, working programmes of subjects and disciplines (modules) and other materials that should ensure the quality of training, as well as plans for internships, an academic calendar and methodological materials that ensure the relevant teaching and learning techniques are employed". Thus, the description of the programme profile, the programme aims, the graduate's competence model or the desired learning outcomes are not featured among the compulsory CEP elements.

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[5] Article 9, p.6.2 of the Russian Federal Law of 10 July 1992 № 3266-I "On Education"; article 5 p.5 of the Federal Law of 22 August 1996 N 125-FZ "On higher and post-HEI professional education".

It is true that the requirement to comply with the federal educational standards implies that all these elements should be present, since the FSES mention them. Still, the existing normative documents do not clearly state that a HEI must provide such information. The normative documents limit themselves to declaring that descriptions of major professional roles for which the bachelor student is prepared are to be defined by HEIs together with the student, academic staff and employer organisations.

In other words, the legislation does not encourage HEIs to actively seek programme specialisation, while HEIs, perhaps due, among other things, to their previous experience, are not eager to take the initiative. As one of ACUR experts involved in *Monitoring* observed, "The reasons seem to be administrative rather than psychological: It is often difficult to get the Rector's office to approve a document full of innovative approaches".

Unfortunately, the new Federal Law *On education in Russian Federation,* which is to be implemented from 1 September 2013, does not change things dramatically. The improved definition speaks of an educational programme as "a complex of core educational elements (volume, contents, expected outcomes) and administrative and pedagogic provisions … that is to be represented by a curriculum, an academic calendar, subject programmes, and other components, as well as assessment and methodology materials".[6] Again, the need to formulate programme aims and specialisation is not mentioned directly. Only the expected outcomes are mentioned. However, if the general aim has not been considered previously, the programme will hardly reach its aim.

The *Monitoring* project has also identified a number of problems in the area of programme design and implementation related to drawbacks in the FSES. On the one hand, these Standards have incorporated the core categories of EHEA and TUNING (competences, learning outcomes, credits) and key methodological principles. On the other, the Standards themselves have created serious problems for the implementation of these categories by setting programme structure and outcomes requirements that were incompatible with full implementation of these methodological principles.

The major FSES drawbacks in this respect are as follows:

— The lists of generic competences proposed are not consistent among different Standards, both in terms of their number and in terms of approaches proposed even for neighbouring areas (degrees);

— The lists of subject-specific competences are excessively long in the majority of Standards and are poorly structured along the possible

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[6] Federal Law of 29 December 2012 N 273-ФЗ "On educational in the Russian Federation".

professional activity profiles of the graduates (and in many Standards they are not grouped in any manner at all); the core subject-specific competences of every degree, obligatory for all graduates, are not set apart, which means that CEPs are obliged to cater for all the subject-specific competences listed in the respective Standard (that are numbering from 30 to 80 for a Bachelor programme);

— The cycle (horizontal) CEP structure and cycle workloads expressed in terms of credits, as envisaged by FSES (Section 6), do not allow HEIs to design modular (vertical) elements of educational programmes and to implement the programme in the modular format associated with European Credit Transfer and Accumulation System (ECTS User's Guide (2009)[7]).

— The learning outcomes related to particular elements of educational programmes (cycles, sections) formulated in FSES (Section 6, *CEP Structure* table) bear little relation to the lists of competences formulated in the same FSES (Section 5);

A solution which might be applied while waiting for the next version of the Standards (which is being currently developed by the Ministry of Education and Science of the Russian Federation) could consist of Russian HEIs incorporating the TUNING profile development methodology into their actions of designing educational programmes. As the *Tuning Guide to Formulating Degree Programmes Profiles* states, "The Degree Profile is a very brief document, of around two pages, designed to convey the essential information about a specific degree programme. It locates the programme in the academic map of disciplines or thematic studies. The Profile specifies the subject area or areas studied, identifies the level (first, second or third cycle) and indicates the special features that distinguish it from other similar programmes. The Degree Profile describes, in terms of competences and learning outcomes, what graduates will know, understand and be able to do by the time they have successfully completed the programme. The Profile spells out what can be expected of the graduates in terms of the kinds of tasks they are equipped to undertake, their level of expertise and the responsibilities they can assume".[8]

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[7] European Commission, ECTS Users' Guide, http://ec.europa.eu/education/pub/pdf/higher/ectsguide_en.pdf

[8] Jenneke Lokhoff, Bas Wegewijs, Katja Durkin, Robert Wagenaar, Julia González, Ann Katherine Isaacs, Luigi F. Donà dalle Rose, and Mary Gobbi, eds. A Guide to Formulating Degree Programme Profiles, Competences in Education and Recognition Project (CoRe). Bilbao, Groningen, and The Hague: Universidad de Deusto, 2010, p. 15.

The elements that form the profile template are as follows:

— Purpose
— Characteristics
— Employability & further education
— Education style
— Programme competences
— List of Programme Learning Outcomes[9]

These elements should help educational programme designers to build a coherent whole, to make it clear to the students, instructors and potential employers how this particular degree of this particular HEI is different from other degrees within the same area of specialisation. Besides, the profile may explain how the degree in question is related to the existing national and international qualification frameworks; describe future areas of employment for the graduates; state if the degree in question is a research-oriented or an applied one, etc.

Depending on the aims and the nature of the degree, the profile enumerates the competences to be developed by the graduates, which in turn determine the desired learning outcomes. This leads to the maximum transparency of the educational process: one can clearly see why the things are done the way they are done.

The question as to which elements should build up the profile and how many elements are necessary is still being debated. There are those who believe that there should be more elements and that the profile should include, for example, a description of the degree structure, teaching and learning techniques, etc. In this case, the notion of the *profile* becomes every similar to that of the Russian concept of the *core educational programme*.

Neither approach affects the argument we have been making. In any case, this is a document (or a set of documents) developed by HEI representatives (both academic and administrative staff) and approved by relevant state bodies (by way of state accreditation) or by the society (by way of professional or public accreditation). The degree profile comes as a response to a certain demand considered relevant by society. Regardless of its size, the profile — and its Russian counterpart, CEP — should reflect an internally-coherent educational programme and explain clearly what a person who completes this programme successfully will be able to do, in what sectors he/she will be able to work and what professional activities he/she will be able to perform.

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[9] Ibid., 20.

In spite of the fact that each educational programme is unique and reflects the points of view and decisions of the team who develop it, it should account for the key features of the relevant subject area. This is why the TUNING project has elaborated the mechanism for determining core competences, whose use could be recommended to the Russian degree designers (see below).

As predicted by the experts, Russian higher education reform has run into considerable psychological resistance within higher educational institutions against the new "meta-language" of education (competences — modules — credits) and the innovative technologies of educational program development. The major difficulty here is that Russian HEIs have no experience of formulating programme's aims or mission (earlier, especially in the area of classical university education, curricula were based on traditional approaches and only rarely updated to account for advances in the relevant disciplines) or formulating measurable learning outcomes. Another major obstacle is that fact that Russian higher education degrees have traditionally provided a broad foundation rather than narrow practice-oriented professional training. What is clear is that, firstly, Russian HEIs will need considerable time if they are to truly convert to the new system, and, secondly, that forcing HEIs to apply the new format without facilitating a change in mentality can only lead to a "mechanical" — counterproductive — application of the new language.

IV. TUNING Russia

Taking into consideration the points made above, it seems that the most reliable way of making sure the TUNING methodology is embraced widely in Russian academic circles is to clearly demonstrate the advantages provided by the TUNING basic principles and approaches. This is what the above-mentioned *TUNING Russia* project (2010-2013) aims to achieve. The project consortium comprises 4 EU universities (the University of Deusto (Bilbao, Spain), project Coordinator; The University of Groningen (Groningen, Netherlands); Trinity College, University of Dublin (Dublin Ireland); and University of Padua (Padua, Italy)), as well as 13 Russian HEIs (Astrakhan State University, Don State Technical University, Moscow State Academy of Business Administration, Moscow State Oblast University, Lomonosov Moscow State University, Moscow State University of Railway Engineering, N. I. Lobachevsky State University of Nizhni Novgorod, Yaroslav-the-Wise Novgorod State University, Russian State University for the Humanities, North-Caucasus State Technical University, Tver State University, Tula

State Lev Tolstoy Pedagogical University, Udmurt State University and Association of the Classical Universities of Russia (ACUR). *TUNING Russia* project aims to institutionalise the use of the Tuning methodology within the educational philosophy and practice of Russian HEIs. The project has two core objectives: to create a network of TUNING consultation and methodology centres in Russia and to adapt TUNING methodological approached to the Russian system of higher education.

To reach these, working groups in the following subject areas have been created: Environmental Engineering, Foreign Languages, Information and Communication Technologies, Education, Social Work, Tourism, Ecology, Economics and Management, and Law. At the same time the project participants took into account that there was no Russian equivalent of the European notion of *subject area* (the existing notions were either broader or narrower than that of the *subject area*).

The first task addressed by the Russian and EU experts who formed the working groups was gaining first-hand practical knowledge of how to use TUNING recommendations for determining the generic and subject-specific competences for a subject area. The second task consisted in designing Reference Points that would allow development of educational programmes of all levels of higher education in each subject area (the lists of generic and subject specific competences together with generic learning outcomes for the levels of Bachelors and Masters). At the moment, the working groups are spelling out a methodology for designing educational programmes on the basis of Reference Points and are preparing pilot Bachelors and/or Masters programmes expressed in terms of modules and credits.

The lists of generic and subject-specific competences have been developed on the basis of:

— An analysis of the Russian labour market and the existing Russian professional standards for the relevant subject areas (where those exist);
— An analysis of requirements for the 1st and 2nd cycle CEP graduates in terms of learning outcomes, as formulated in the Russian Federation Federal State Educational Standards;
— An analysis of existing international professional standards for the relevant areas of professional activity;
— A study and adaptation of the experience of drawing up the lists of generic and subject-specific competences within EHEA;
— Consultations with Russian and European experts;
— Discussing and fine-tuning initial lists of generic competences suggested by different working groups, agreeing on the "core"

generic competences common to all the subject area groups of the project;
— Consultations with Russian employers, students, academics and HEI graduates though written questionnaires about the provisionally proposed lists of generic and subject-specific competences prepared by working groups in each subject area.

The need to formulate a list of generic competences common for all the subject areas involved was put forth by ACUR on behalf of the Russian members of the project consortium, as one of the key steps to be completed within the *TUNING Russia* project. Following the steps enumerated above, such a list was created and consists of 30 competences. Next, it was important to discover which of these competences are most valued by employers and by the educational process participants. Four competences were ranked highest by all the stakeholders — employers, academics, students and graduates:

— Capacity for abstract thinking, analysis and synthesis;
— Capacity to identify, formulate and solve problems;
— Capacity for applying knowledge in practice; and
— Teamwork ability.

When the Reference Points for Educational Programmes' Design were developed for each subject area, these "core" generic competences were complemented with other generic competences from the 30-item list mentioned above. Thus, in the subject area of *Economics and Management* four more generic competences were added on the basis of stakeholder consultation data analysis:

— Ability to work autonomously;
— Ability to act in accordance with the principle of social responsibility and civic consciousness;
— Concern for reaching the objectives (goal-oriented approach); and
— Concern for quality (quality-oriented approach).

While determining the lists of generic competences, working groups in some subject areas decided to group these into "meta-competences". Thus, the final list of generic meta-competences for the *Economics and Management* subject area comprises only 7 items. When the *Full common list of generic competences* relevant for all Russian higher education graduates (All-Russian competences list) and the *Final list of meta-competences for the area of Economics and Management* were compared, it turned out that only one competence from the *Full common list* — project design and management — does not form part of any meta-competence of the *Final list of meta-*

competences for the area of Economics and Management. All the other items of the *Full common list* are reflected in the *Final list* as parts of the seven meta-competences. This means that generic (meta-)competences particularly relevant to a specific subject area can be spelled out using the All-Russian *Full common list* items.

Reference Points for designing degrees of all levels developed for the subject areas addressed by the *TUNING Russia* project. The mechanism for moving from the general concept of a competence to the measurable learning outcomes, as well as the pilot degrees built in the modular-credit TUNING format on the basis of the Reference Points all can serve as a solid methodological basis for improving Russian higher education FSES and to help Russian HEIs develop their own educational standards.

This is why the *TUNING Russia* project coordinators recommend that Russian HEIs (especially those who have the right to implement educational programmes based on their own standards) to start using TUNING materials now, without waiting for FSES to be amended or replaced with a new set of Standards. It is important to understand that the TUNING methodology does not restrict programme developers in any way. The TUNING methodology preserves flexibility and autonomy, while offering a universal mechanism and a common language for formulating the degree objectives, ways of reaching these objectives (in the form of a set of learning outcomes, which, in turn, guide the formulation of the curriculum elements (modules) and the use of adequate teaching and learning techniques) and means to measure the level of competence development (descriptors).

V. **Conclusions**

Summing up, Russian HEIs are only starting to master the TUNING methodology. Thanks to the dissemination seminars and workshops organised by participants of the TEMPUS projects carried out in the early 2000s and especially by members of the current *TUNING Russia* (2010-2013) project, more and more stakeholders within the Russian higher educational system are becoming familiar with the TUNING methodology for educational programme design and with examples of best practice in TUNING-based degree design from all over Europe. Nevertheless, many of those remain passive and do not apply their knowledge of TUNING methodology when designing their own CEPs. Partly, this is due to the objective drawbacks of Russian Federal State Educational Standards and other normative documents, which adopt the competence-credit-module language but do not always explain what mechanisms can be used in order

to implement this approach. Besides, the new mechanisms often seem foreign to those unfamiliar with them and the change of the "meta-language" may be difficult to assimilate for academics, especially for those who belong to the older generation.

In these circumstances, creating TUNING-model degree profiles may be crucial to aid the Russian HEIs in the development of the new educational programmes. Brief but all-encompassing formulation of the aims and outcomes and specific characteristics of an educational programme, listing competences and learning outcomes could permit HEIs to move from trying to comply with standards and requirements sent from above and foreign to the institutions themselves to adopting the principle of transparency and designing better and more competitive degrees.

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Programme Profiles and the Reform of Higher Education in Europe: The Role of Tuning Europe

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Abstract: This article provides an overview of the profiling of higher education programmes in Europe as part of the overall process of higher education reform in Europe over the past decade (2000-2012) and of the role of Tuning in this process. The article starts with a recall of the architecture and objectives of the change process, based on the interplay between the intergovernmental Bologna process (with a main focus on structural change), the European Union's parallel Agenda for the Modernisation of Higher Education (with a focus on policy change for the Union's main objectives: growth and jobs, mobility, recognition and attractiveness) and Tuning. The second part of the article provides some data about and examples of the method and importance of Tuning in stimulating and shaping the renovation of higher education programmes, with a focus on Tuning's initial geographical area (Europe) and a glimpse to other continents, in line with Europe's need to build up the visibility and attractiveness of its universities in the rest of the world. The final section is a retrospective and analytical reflection about the impact of Tuning on some key dimensions of the agenda for the modernisation of higher education in Europe; while acknowledging that the Tuning method and principles have not always been fully understood by higher education as well as governmental institutions, Tuning has made an outstanding contribution to such key aspects as the relevance, comparability and quality of programmes, the development of quality assurance and accreditation policies and agencies and the recognition of qualifications — both within Europe and with partner countries in other parts of the world.

Keywords: Bologna Process; Competences; Curriculum Development; Employability; Europe; Higher Education Reform; Learning Outcomes; Modernisation of Higher Education; Programme Profiling; Quality Assurance; Tuning.

Tuning is one of several processes that have contributed to transforming higher education in Europe since the turn of the Millennium, in particular with respect to curricular renovation - a major requirement of both the pan-European Bologna process and the EU's Agenda for the Modernisation of Higher Education.

I. **The interplay between Bologna, Lisbon and Tuning**

1. *The Bologna Process*

In the wake of the Sorbonne Declaration that preceded it by one year, the Bologna Declaration emerged in 1999 with the ambition to set-up a coherent and attractive European Higher Education Area (EHEA). Its initial impetus came from the acknowledgment of need to address three main issues: the negative consequences of the fragmentation of European higher education into largely incompatible and illegible national systems; the worrying mismatch between what higher education is delivering and the changing needs of Europe's labour market; and the diminishing competitiveness of European higher education (and research) in the world.

The main thrust of the Bologna Process was to be on structural reforms converging towards a set of common features: a degree structure based on a common framework of reference for the first (bachelor-type), second (master-type) and third (doctoral-type) level of qualifications, ECTS-compatible systems for the accumulation and transfer of credits, generalisation of the Diploma Supplement and more numerous joint/double degree courses, setting up of quality assurance systems with some kind of compatibility and articulation at the European level.

These structural changes were nonetheless expected to achieve more profound transformations:

— To foster more and easier mobility: lessons learnt from over 10 years of experience with the Erasmus programme showed both the power of large-scale mobility as a lever for change and the huge obstacle to mobility stemming from the fundamental incompatibility of the various national systems.

— To achieve more relevance of higher education to social and economic needs: concern about the "employability" of graduates has been maybe the most common feature between all signatory countries, mainly with respect to their domestic labour market, but also to the (single) European labour market; the capacity and the right of citizens to work anywhere in the EU — which is one of the pillars of European integration — can only become a reality if their qualifications are of sufficient quality and relevance and are legible and trusted beyond their national boundaries - which calls for more transparency and for compatible quality seals. At the same time, after a decade of large-scale mobility and cooperation, authorities became more aware of the pockets of inefficiency in their national systems (e.g. in the form of over-long studies, high dropout and failure rates, high graduate

unemployment or negative incentives to institutional effectiveness) and found out about better practice in other countries; these lessons from mobility and comparability provided renewed impetus for change/improvement in legislations, programmes and systems.

— To re-establish the attractiveness of European higher education in the world: Bologna spread the awareness that European higher education was not easily legible — neither in Europe nor *a fortiori* elsewhere in the world — and had lost (at least some) of its former attractiveness. This provided a strong impetus for remedial measures in many countries.

It was therefore expected that with Bologna most — if not all — universities in Europe would bring their existing degree structure in line with the main levels of First Degree (often Bachelor), Master and Doctorate and would seize the opportunity to revisit the architecture, content and teaching-learning methodology of their programmes, with a view to enhancing such aspects as employability, internationality, flexibility, attractiveness, access to lifelong learners, etc.

2. *The EU's agenda for the Modernisation of Higher Education*

This agenda was launched in 2002 as a strand of the "Lisbon Strategy" and has later been extended as one of the pillars of "Europe 2020", with a view to contributing to the Union's macro-strategy for growth, jobs and social integration in the knowledge era; as a result, the Bologna call for structural change has been intertwined with the EU's call for higher education policies "in a lifelong learning and a worldwide perspective".

Contrary to Bologna itself, the EU's agenda for higher education was to focus mainly on policy measures converging towards the Union's main goals, in such areas as system and institutional governance and funding, institutional and programme diversification, quality and relevance of studies and research-innovation, skills development for jobs and growth, quality assurance for mobility and the attractiveness of Europe as a destination for students, scholars and researchers from the rest of the world. Several of these policy areas, the reforms needed are also those promoted, from a different viewpoint, by the Bologna process, in particular with respect to the redefinition of study programmes and teaching/learning methods.

The main European Commission Communications that shaped the Agenda for the Modernisation of Higher Education[1] gradually defined the

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[1] In particular: Commission of the European Communities, "Mobilising the Brainpower of Europe: Enabling Universities to Make Their Full Contribution to the Lisbon Strategy,"

change needed in order to allow universities to make their full contribution to the Lisbon goals called for:

— an alignment of the all higher education qualifications with the four corresponding levels of the European Qualifications Framework (EQF);
— the definition of qualifications in terms of skills and competencies, having regard to the needs and capacities of the local and global labour market;
— greater efficiency of the learning process, with more flexible curricula, customised attention (tutoring) to the needs, difficulties and progress of each individual learner, formative evaluation, varied pedagogical approaches, recognition of prior learning, etc.;
— and the profiling of programmes with a view to diversifying the educational "menu" available to traditional and non-traditional learners and stimulating educational innovation.

This change agenda is largely an endorsement - or reinforcement — within the EU context and drawing on EU processes and resources, of the curricular reform already advocated by the Bologna Process. It may also be seen as an acknowledgement that the achievement of the EU's macro-strategic goals hinges on the effective implementation of the Bologna reforms in higher education, in particular with respect to "renovation" and "profiling of the study programmes leading to the various types and levels of "qualifications". This intertwining of the Bologna and Lisbon agendas for change in higher education has resulted in their cross-fertilisation and has enhanced their global impact, in particular in such areas as curricular change, quality assurance or the recognition of qualifications within the EU as well as in the broader EHEA or in the rest of the world.

3. *Tuning within the context of higher education reforms in Europe*

Tuning, proceeding from the same awareness of the need for change in European higher education, started simultaneously and developed in parallel with the main underlying change processes (Bologna and Lisbon). Yet, its main focus has been on the re-development of teaching-learning programmes,

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Communication from the Commission, COM (2005) 152 final, 12. Brussels: European Union, 2005; Commission of the European Communities, "Delivering on the Modernisation Agenda for Universities: Education, Research, and Innovation," Communication from the Commission, COM(2006) 208 final. Brussels: European Union, 2006.

in the perspective of lifelong learning and with a view to the skills/ competencies (targeted Learning Outcomes) that students need to acquire in each main area of qualification.

This relies on, and calls for a very complex, difficult, Copernican revolution, since it implies a profound change in the purpose of higher education (equipping students with the right competences rather than acquiring all knowledge in a discipline), the design of the teaching-learning process (which needs to become student-centred rather than teacher-centred) and role and attitude of teachers, learners and programme managers. Hence, the call to reform higher education programmes became, at the same time, more "complicated" and more concrete. The need to realign programmes with the agreed learning objectives and qualification levels, to define them in terms of ECTS credits and gear them more towards "employability" and "Europe" (as required by Bologna and Lisbon) was complemented by the Tuning "approach", in two main ways: it allowed a first group of higher education professors to gain a more tangible understanding of the sense and scope of the reforms to be introduced, and it brought the debate to the level of the main disciplinary areas (or rather "qualification areas"). Through this dual contribution, Tuning has paved the way towards "real" change at the heart of the educational processes and communities.

Hence, it seems clear that while Tuning might not have existed in Europe without the supportive context of Bologna and Lisbon,[2] there is little doubt that the impact of Bologna and Lisbon on the renovation of curricula and methods has been seriously strengthened thanks to Tuning.

II. **Tuning at work: profiling programmes in European higher education**

Tuning started in September 1999 as a project called *Tuning Educational Structures in Europe* and aimed at animating the process of curricular change at grass-root level in European higher education over the forthcoming years. It has drawn from the beginning on the new dynamics of the recently adopted Bologna Declaration (June 1999). A second thrust came from the already mentioned Copernican change in the learning / teaching methodologies from input-centred teaching to student and outcome-centred learning; this change was on-going since years at the lower levels of education; when transferred to the HE level, it raised considerably the attention paid to the real potential

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[2] Nevertheless, Tuning — once born in Europe — has existed in other parts of the world without similar supporting contexts.

and needs of the job market: in those days, common criticism referred to the mismatch between higher education and the job market, and to the over-education of graduates with respect to the job market's needs.

The Tuning Project soon became a "process" in itself. Through Tuning-Europe, academics from over 150 Higher Education Institutes (HEIs) delivered important findings, which later were to inspire much of the rest of the world throughout similar processes. Tuning Europe was designed and implemented "by and for universities" and led to the development of an operational methodology for the design of degree programmes in specific thematic areas within the framework of the emerging common educational space in Europe. It became therefore known as the universities' response to the Bologna challenges put to them by their governments. The process was keen to respect the diversity of HE systems and institutions and their right to design their own programmes in an autonomous way: it was never meant to be prescriptive — even though it may sometimes have been misinterpreted as providing "model" programmes to be replicated. A pillar of the process has been the stress put on data sharing, joint analyses and dialogue — among academics, between academics and students/graduates, among institutions, between institutions and current/potential employers, etc.

From its start Tuning Europe evolved through projects, which produced deliverables that would later be available as operational tools for academic institutions at large — not just for those involved in their actual development. It linked to, or affected higher education activities in several different ways.

1. *Common tools for the profiling of educational programmes*

Tuning started at grass root level (i.e. among normal academic staff) as an effort to define a common terminology and common concepts for the planning, maintenance and description of programmes. This common language refers to the competencies needed by students for their personal life and for the job market,[3] which they need to have acquired at the time of course completion and to demonstrate through the assessment of the appropriate "Learning Outcomes".

Subsequently, it led to the actual use of these concepts throughout the academic community as tools for the definition of specific programmes, i.e. for their profiling in the institutional and global context.

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[3] The term "job market" is used here in its most general significance, including for instance, self-employment or research positions in the HEI themselves.

The Tuning terminology soon came to be used in more formal settings and contexts, in particular:

— in the series of Bologna Communiqués from Berlin 2003 onwards, when Ministers for the first time invited HEIs to adopt the Tuning approach in HE by using concepts and wording already developed within the Tuning community — even though the name Tuning was not explicitly mentioned;

— in several national or regional reform bills aimed at the implementation of the Bologna reforms, often adopting a language reflecting Tuning terminology and methodology; in some cases, such legislation referred to the Dublin Descriptors, which entered the Bergen 2005 Communiqué as a kind of "political" key word referring to the role of competencies and Learning Outcomes, i.e. to what the Tuning Community already used to call "reference points";

Over and above concepts and terminology, Tuning provided for the testing and use of concrete operational tools for the setting-up and management of the educational offer at the grass-root level within HEIs. These tools were mainly:

— A clear, simple and "operational" approach to what is meant by "competences" (*what is left* in the learner's brain and hands after completion of the educational process) and "Learning Outcomes" (*what academics state* at the planning stage of a degree programme as the desired outcomes of the learning process). Tuning has spread a pragmatic approach to these two core concepts, giving transparency to much of the literature existing on them and promoting in a workable way their inclusion in the educational debate and the practice of HEIs;

— The consultation of stakeholders and the links with the job market: this tool was based on a reasoned list of about 30 generic competences (grouped into Instrumental, Interpersonal and Systemic ones), which through the consultation of different stakeholders were to be rated according to their importance in the job market and to their degree of achievement through the educational process. The stakeholder groups included students, graduates, academics and employers. The source questionnaires, data gathering process and analysis method used are still available and applied in several circumstances;

— The Tuning list[4] of key questions for planning/revising a degree programme: this seems to have been a particularly useful tool both as

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[4] See: Julia González and Robert Wagenaar, eds., *Tuning Educational Structures in Europe. Universities' Contribution to the Bologna Process. An Introduction.* 2nd ed. (Bilbao: Universidad de Deusto, 2008), 135 (Annex 1).

a synthesis of the operational steps of the Tuning overall methodology and as an inspiration for various types of quality enhancement processes;

— The "Tuning Reference Points" for more than 40 different Subject Areas: as already highlighted above, these are the pillars of the new methodology; the concrete identification of "reference points" in many different subject areas demonstrated the soundness and feasibility of the Tuning approach and served as a source of inspiration for its extension to other subject areas;

— Guidelines for the degree-profile description: this tool links both competences and learning outcomes directly to the programme, introducing in a clear manner the (new) concept of Programme Learning Outcomes. The guidelines[5] also provide simple and concrete suggestions about how to structure the description of the relevant competences and Learning Outcomes;

— A fresh look at collection of student data, which increasingly focuses on gathering information about the students' "human" assets, expressed in terms of generic and subject specific competences in several contexts, including (but not limited to) the "assets" for graduates' access to the job market.

2. *Tuning as a "living" red thread through higher education programming*

Tuning Europe can also be looked at as being a kind of "living" *red thread*, which interweaves several different projects, causing the Tuning community to evolve and enrich itself with new perspectives and concepts. A conservative estimate suggests that representatives and experts from more than 600 European HEIs were actively involved. This can best be illustrated by recalling that each of the Tuning Brochures, which provide a synthesis of the best fruits of Tuning in as many as 43 different subject areas, was produced by a team of (on average) 15 subject area experts: 43 times 15 yields 645 experts.

The following table shows the sequence of projects and phases of the Tuning process in Europe (first column) and the main concepts and tools (second column) and other relevant developments (third column) of each project/phase.

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[5] Jenneke Lokhoff, Bas Wegewijs, Katja Durkin, Robert Wagenaar, Julia González, Ann Katherine Isaacs, Luigi F. Donà dalle Rose, and Mary Gobbi, eds., *A Guide to Formulating Degree Programme Profiles* (Bilbao, Groningen, and The Hague: Universidad de Deusto, 2010).

Table 1

Development of main concepts within the Tuning Community

Projects / Phases	Main concepts / Tools	Other relevant issues	Other involved bodies
Tuning Europe 2000 - 2008	definition of Learning Outcomes and competences 9 SAGs Reference Points	• New terminology • Checklist for planning/maintaining a curriculum • Brochures for 9 Subject areas	
Socrates Thematic Networks since 2002	EC reccommendations for taking Tuning "on board"	• Tuning Counselors • 2 European Tuning Information and Counseling Centers • 38 Tuning Information Points (TIPs) • Reference Points for 24 new SAs	EC
SQFs in Social Sciences HUMART 2008-2011	Sectorial reference points	• Identification of main educational sectors (Social Sciences, Humanities and Arts, Natural Sciences, Health Sciences, Sciences & Technology) • Relation between QF for EHEA and EQF-LLL • Reference Points for 8 new SAs	
CoRe2 2008 - 2010	Formulating a degree profile	Learning Outcomes as a measure of Competences	ENIC-NARIC centers
AHELO 2008 - 2013	Measuring and comparing competences at an international level	• A global test for a direct assessment of students' performance • Reference Points for 2 new SAs	OECD
Tuning Academy phase	• Tuning HE Journal • Reflection on meta-profiles	• Dissemination • Developing new dialogue/comparability tools • Involving specialized target groups?	

The first project — *Tuning Educational Structures in Europe* or simply Tuning Europe — was actually articulated in four two-year phases (or sub-projects) and served as a real academic laboratory that produced new concepts and ideas and changed the way of thinking of many participating academics. Its main achievement was the development of a common and shared methodology (together with the corresponding terminology) about how to plan or update a degree programme, on the basis of a student-centred approach and of concepts like student sustainable workload (measured in ECTS), inventory of teaching/learning methods and of assessment habits. The objective of degree programmes is that at the end of the educational process each learner achieves well-defined "Learning Outcomes", through which she/he acquires competences useful for her/his future life (both personal and professional). The Learning Outcomes — both at programme and course unit level — are defined in advance by the academics concerned, through a constructive dialogue/debate among themselves and with the interested outer world. At the same time, "competences" are seen as an asset of each individual student, once she/he has successfully completed the whole programme.

This first project showed the feasibility of the whole Tuning methodology and yielded inspiring fruits in nine Subject Areas: seven of these (Business, Chemistry, Education Sciences, Earth Sciences, History, Mathematics and Physics) participated in the initial project, and two more (Nursing, a regulated degree programme, and European studies, an interdisciplinary programme) joined half way. Most of these Subject Area Groups (SAGs in the Tuning jargon) were backed by already existing Socrates Thematic Network Projects (TNPs). Already at that time it became clear that going through the Tuning methodological process in a "second run", relying on the experience of the TNP, was much more effective and less time consuming. This observation was confirmed by all subsequent work, both in and outside Europe. The final "deliverable" of the Tuning Europe project was a set of nine Tuning Brochures providing the Tuning key concepts and, for each subject area, a list of relevant intended Learning Outcomes and of generic as well as subject specific competences; these lists became known as "Tuning Reference Points".

The second important step in the European Tuning process started in 2002 when the European Commission recommended to all Socrates TNPs — about 35 at that time — to "take Tuning on board" in their own Project. This led to new interesting developments, in parallel to the on-going Tuning Europe project. Some Tuning Europe participants became *Tuning counsellors* coaching one or more TNPs. This paved the way for the subsequent establishment of 2 *European Tuning Information and Counselling Centres* and of 38 national *Tuning Information Points* (TIPs). This led to the production of Tuning Brochures for 24 additional subject areas.

A third stage of Tuning started in 2008 when Tuning proposed to prepare *Sectorial Qualifications frameworks (SQF)* as a contribution to the debate on the European Qualification Frameworks, i.e. the EQF for the European Higher Education Area already adopted in 2005 as part of the Bologna Process, and the broader EQF for Lifelong Learning encompassing all types and levels of qualifications. Developing such "Sectorial" Qualification Frameworks consisted mainly in identifying Tuning Reference Points common to a broad "sector" of related subject areas. Five sectors were identified: Social Sciences, Humanities and Arts, Natural Sciences, Health Sciences, Sciences & Technology. In the end, two SQF projects were funded, respectively for Social Sciences and for Humanities and fine Arts ("HUMART"). They yielded Tuning Reference Points and Tuning Brochures in eight additional areas: International Relations, Law, Psychology, Social Work (for the SQF in Social Sciences[6]), Art History, Literary Studies, Linguistics, and Theology/Religious Studies (for the HUMART SQF[7]).

Tuning was also involved in two other projects: *CoRe2 (Competences in Education and Recognition - phase 2)*, led by the NARIC network, produced guidelines for the description of programme profiles (in terms of Learning Outcomes and the development of the related competences); the OECD-led AHELO (*Assessment of HE Learning Outcomes*) project aims to develop a *global* test assessing the performance of HE students in Economics and Engineering and comparing them on a worldwide scale using Tuning Reference Points for each subject area and for generic skills. This led to the preparation of innovative tools for student assessment and further contributed to the series of Tuning Brochures. The final outcomes of AHELO are expected later in 2013,[8] but it seems already clear from the case of Engineering that they will resemble Tuning's new way of looking at competences, called a "meta-profile" (see next paragraph).

The hitherto final stage of Tuning Europe is the *Tuning Academy*, which was announced in 2008 and formally launched in 2011. It has added two important new developments: the regular publication of the Tuning Journal

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[6] Julia González, "Tuning Sectoral Framework for Social Sciences. Final Report, Public Part." Education, Audiovisual & Culture Executive Agency of the European Commission, 2008. http://www.unideusto.org/tuningeu/images/stories/sectoral_framework/2007_10347_FR_Tuning_SQF_PUBLIC_PART.pdf.

[7] Tuning Project,*Tuning Sectoral Qualifications Frameworks for the Humanities and the Arts. Final Report 2010 - 2011* (Bilbao: University of Deusto, 2012).

[8] While waiting for the final reports, see Organisation for Economic Co-operation and Development (OECD), "Higher Education and Adult Learning. Testing Student and University Performance Globally: OECD's AHELO," OECD, http://www.oecd.org/education/highereducationandadultlearning/testingstudentanduniversityperformancegloballoyoecdsahelo.htm.

in Higher Education (TJHE), aimed at disseminating TUNING contributions and coaching new generations of Tuning "followers"; and the development of *the meta-profile concept*, which adds new light to the Tuning Reference Points. A meta-profile aims at making explicit the relationship and hierarchy among competences in a given subject area; the earlier lists of generic and subject-specific competences are merged into a reasoned structure of competences. The meta-profile includes innovative competences as a source of inspiration for concrete programme (re)- planning in the given subject area. This new concept has already facilitated and enriched the dialogue between European Tuning Community and Tuning processes elsewhere in the world (notably Latin America, Russia and Africa), where the coverage of subject areas tends to be similar to the European ones, but always with a novelty, originality and freshness specific to each region.

An overview of the 43 subject areas for which Tuning Europe produced teaching/learning reference points is shown in Table 3 (Section III).

3. *Tuning Europe at work: some examples*

The examples that follow were chosen from Thematic Network Projects drawing on the Tuning approach and on the collaboration with Tuning experts. It was already mentioned that the effectiveness and efficiency of the Tuning method was enhanced in areas where a first round of discussion could be organised within the framework of the TNP, and over 55% of all Tuning Reference Points in Europe were produced in cooperation with a TNP. These examples are meant to show the flexibility, pragmatism and richness of the Tuning perspective.

— *Arts and Music:* Tuning cooperated with the European League of Institutes of the Arts (ELIA[9]) in a sequence of 3 TNPs; this extensive work led to a handbook[10] containing four Tuning documents in the areas of dance, design, fine art and theatre; later on, a similar document dealing with film/screen arts was also produced. These documents cover all three cycles, with advanced insights on the doctoral cycle — even though a common European approach and format is still seldom at this

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[9] European League of Institutes of the Arts (ELIA), "Tuning Document for Film/Screen Arts Education," EIA, http://www.elia-artschools.org/images/activiteiten/20/files/Tuning%20 document%20film%20EN.pdf.

[10] John Butler, Kieran Corcoran, Tomasz Kubikowski, and Truus Ophuysen, eds., *Tapping into the Potential of Higher Arts Education in Europe*, Interartes Handbook (Amsterdam / Warsaw: European League of Institutes of the Arts (ELIA), 2008).

level. Tuning also cooperated with the Association of European Conservatories (AEC) through a TNP called Polifonia[11] that was set up as a 'Tuning' Working Group. Its main objective was *to develop the existing AEC descriptions of learning outcomes for the 1st and 2nd cycles to the next level of sophistication and implementation, by linking learning outcomes with other dimensions, such as: the relation with competences, the use of credit points, competence-based teaching and learning, assessment procedures, curriculum design in modular systems, internal and external quality assurance mechanisms, etc."* Several deliverables were produced: three handbooks for higher music education, reference points and sectorial Dublin Descriptors, a pool of Tuning counsellors in the area of Music, etc. The success of the Tuning methodology in the areas of Arts and Music may have been eased by the attention paid in these areas to students' performance, which is intrinsic to any artistic teaching/learning effort; yet, the Tuning approach helped HEIs in Arts and Music to connect with the broader EHAE community, not least thanks to Bologna experts who were also Tuning experts.

— *Occupational Therapy:* this area saw a joint "success story" between Tuning and the two existing TNPs (one between national associations of professionals in Occupational Therapy, and the other between academics from some 170 HEIs offering qualifications in OT). The process started with an extensive consultation of students, teachers and practitioners about Generic and Subject Specific Competences. The application of the Tuning methodology led to an in-depth review or the creation of degree-courses in several countries in the EU (notably the UK) and elsewhere (Turkey, Armenia, Georgia).

— *Humanitarian Development Studies:* the adoption of the Tuning methodology allowed the TNP to (re)shape three international master courses (including an Erasmus Mundus Master), define two "Tuning planned" international doctoral programmes (on Migration & Diversity and Peace & Conflict Studies) and establish a Sectorial Qualifications Framework in the subject area.

III. Assessment of the contribution of Tuning to key aspects of the EHEA

This section tries to provide an assessment of Tuning's contributions to the setting up of the European Higher Education Area. This may be done

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[11] ERASMUS Network for Music 'Polifonia', http://www.polifonia-tn.org/.

from various perspectives; one is to look at the quantitative impact on the academic community and the academic study areas; another one is to review from a qualitative viewpoint the contribution of Tuning to the implementation of the joint Bologna-Lisbon change agenda on which Tuning has impacted.

1. *The Tuning tools have a very strong impact on the academic community*

A simple e-way to measure it is to look at the hits on the various regional Tuning websites. Table 2 below shows the absolute *number of hits* corresponding to the websites of the main Tuning processes set up so far, i.e. Tuning Europe, Tuning Latin America 1 and 2, Tuning Africa and Tuning Russia.

Table 2

Regional Tuning websites: absolute number and growth rate of hits

Web page	Number of hits (checked 17 November 2012)	Growth rate (hits/day) (november 7th to 17th, 2012)	Starting date of the web site
Tuning Europe http://www.unideusto.org/tuningeu/	4.236.231	425	December 2004
Tuning LA (1st) http://tuning.unideusto.org/tuningal/	5.124.990	813	September 2004
Tuning LA (2nd) http://www.tuningal.org/	290.889	799	February 2011
Tuning Africa http://www.tuningafrica.org/	113.129	325	November 2011
Tuning Russia http://www.tuningrussia.org/	133.263	708	February 2011

These figures should be interpreted recalling that the actual number of hits depends on the date at which the various websites became active (rather recently in the case of some non-European versions of Tuning). It also depends — in a more complex manner — on the academic community involved and on the possible search operations in different geographical areas. It is also interesting to look at the growth rate of these hits, in terms of hits/day. The Table shows that in November 2012 Tuning Europe counted 4.2 million hits, with a growth rate of 425 hits/day. The strong interest of the academic communities backing Tuning

Latin America, Tuning Russia and Tuning Africa is also reflected in the impressive growth rates of hits/day in these regions (in particular in Africa, bearing in mind the difficult technological context in some regions).

Another way to assess the contribution of Tuning Europe to the profiling of higher education programmes is to look at the list of subject areas covered. Table 3 provides an overview of the 43 subject areas for which there are Tuning Reference Points and shows by which particular Tuning project they were produced (or co-produced, in the case of collaboration with TNPs or other co-operative Projects[12]).

2. *Impact of Tuning on key dimensions of the higher education reforms in Europe*

Unsurprisingly, Tuning's strongest and most direct impact on European higher education reforms is to be found in the area of curricular change, modernisation of teaching/learning and programme renovation/profiling. The quantitative data provided in the tables 2 and 3 refer mainly to this "direct" contribution to the enhancement of programme quality and relevance.[13] It can be found in all subject areas (even in those not explicitly covered by a specific set of "Tuning Reference Points"), at all levels (first degree, Master, but also Doctorate) and at all various types of HEIs in all various participating countries. There is no doubt that Tuning — and its shared terminology — had a wide "multiplier effect" reaching far beyond the direct circle of participating academics and institutions.

As was mentioned already, Tuning has contributed to making the Bologna/Lisbon calls for curricular change more understandable and more concrete. It may well be that, while restructuring the architecture of degrees was already perceived as a difficult enough exercise, the Tuning call to add such in-depth curricular and methodological change may have pushed-up the hurdles on the way to modernisation beyond the immediate reach of some actors and institutions. But this was necessary for an effective implementation of the Bologna action lines and Lisbon agenda for university modernisation.

This does of course not mean that the Tuning methodology was always applied correctly, completely and wisely. The same as the Bologna Process itself, the Tuning principles were sometimes misunderstood or distorted and

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[12] For an almost exhaustive list of Tuning Europe subject areas, see http://www.unideusto.org/tuningeu/subject-areas.html

[13] Julia González and Robert Wagenaar, *Tuning Educational Structures in Europe. Universities' Contribution to the Bologna Process,* 111.

Table 3
Contribution of Tuning Europe projects to each of the 43 Subject Areas

	Tuning Educational Structures in Europe 4 phases: 2000 - 2008	(Socrates) Thematic Network Projects since 2002	SQF Social Sciences 2008-2010	SQF HUMART 2009-2011	AHELO 2008-2013
1	Business	Agriculture - USAEE	International Relations	Art History	Economics
2	Chemistry	Architecture - ENHSE	Law	Literary Studies	Engineering
3	Education Sciences	Civil Engineering - EUCEET II	Psychology	Linguistics	
4	Geology or Earth Sciences	Electrical & Information Engineering - EIE-Surveyor	Social Work (with EUSW)	Theology and Religious Studies	
5	History	Geodetic - EEGECS			
6	Mathematics	Computing Science - ECET			
7	Physics	Dance - interJartes/artesnet.europe			
8	Nursing	Design - interJartes/artesnet.europe			
9	European Studies	Fine Art - interJartes/artesnet.europe			
10		Theatre - interJartes/artesnet.europe			
11		Film - interJartes/artesnet.europe			
12		Food studies - ISEKI			
13		Gender Studies - Athena			
14		Geography - HERODOT			
15		Humanitarian Studies - HUMANITARIANNET 3			
16		Landscape Architecture - LE:NOTRE			
17		Languages - P3			
18		Medicine - MEDINE2			
19		Occupational Therapy - ENOTHE			
20		Physiotherapy - ENPHE			
21		Radiography - HENRE			
22		Music - POLIFONIA / AEC			
23		Political Science - EPISTEME III			
24		Sport Science - AEHISIS			
total	9	24	4	4	2

used as an excuse to push reforms into directions suiting certain vested interest. As with Bologna, Tuning was sometimes resisted because it allegedly may impose more "uniformity" (if all HEIs in the end offered very similar programmes geared towards the same Reference Points), while both Bologna and Tuning have been geared towards creating convergence on certain key aspects, and at the same time diversifying ("profiling") programmes in view of their different contexts, aims and institutional/national settings. Bologna and Tuning have always shown the greatest respect for such cultural, national/regional, systemic and institutional differences, but not all actors have been able (or willing) to look at the inevitable tension between the creation of enough convergence and the need for more differentiation.

The same as with the Bologna instruments, the Tuning tools were on occasions applied as if they were to be simply replicated, while they are mainly an invitation to think and find an appropriate answer in the case of each programme at each HEI, depending on the socio-cultural and socio-economic context, the programme's audience and objectives, and the HEIs mission and profile. This means that not all academics have always used the Tuning approach to its full capacity, and that a number of opportunities to renovate and differentiate programmes in a sensible and effective way have been missed.

It should also be acknowledged that the renovation and profiling of programmes according to the Tuning (and Bologna/Lisbon) principles tends to be introduced in incremental stages, not always in a single, strategic move. But there is not the least doubt that Tuning, backed by Bologna and the Lisbon agenda, has been a crucial factor for the renovation of teaching/learning programmes and methods at higher education institutions in Europe.

This also means that Tuning has contributed to enhancing the overall "quality" of the educational programmes offered by European HEIs, in particular with respect to their relevance to the needs of society and of learners. By emphasizing that learners should learn that which will help them in their personal and professional life, Tuning has broken a certain academic tradition focused on encyclopaedic knowledge restricted to a specific subject area. By stressing the importance of Lifelong Learning, it has contributed to breaking the model of overlong initial education programmes that has prevailed in some countries. By insisting on the importance of transversal and generic competences, it has contributed to multi-disciplinarity and to enriching the qualification and professional perspectives of thousands of graduates. From this viewpoint, it may be correct to say that the strongest impact of Tuning on higher education programmes is that it has enhanced their socio-economic relevance — more than their purely academic "quality".

Making programmes more transparent by gearing them towards explicitly stated objectives (Learning Outcomes formulated in terms of competences) also creates, *ipso facto*, more transparency and hence facilitates the recognition of qualifications across institutional or national boundaries. While it is probably impossible to measure its impact on this important dimension of the EHEA, it seems certain that Tuning has contributed extensively to easing the mutual recognition of credits and full qualifications, thanks to their better understanding at other HEIs. The same applies to the recognition of competences or qualifications by employers, once they are clearly stated in terms of LOs and guaranteed levels of skills/competences. Easier recognition contributes to easier/freer mobility — even though the actual level of mobility also depends on many other factors.

Tuning has also made an important —albeit less direct, less visible and less emphasised - contribution to another core dimension of the EHEA, in the area of quality assurance and quality certification. While emphasizing the key role of universities themselves in guaranteeing and improving their "quality" ("internal" quality assurance), the Bologna Process and the EU's Agenda for the Modernisation of Higher Education have encouraged a system of "external" quality assurance based mainly on national agencies; these agencies are of very diverse types and carry out various different tasks, reaching from broad "quality audits" to minute "programme accreditation"; although many agencies use the European Standards & Guidelines for quality assurance (ESG) as a common reference, their actual implementations (i.e. the criteria, procedures and level of requirement) may vary substantially from one country to another. While some more convergence between national agencies may happen in the years ahead, the architecture of the current QA system of Europe could be significantly consolidated thanks to a second pillar not based on national approaches, but on European-wide quality seals in specific subject areas (or qualifications sectors). This was acknowledged in the most recent Progress Report in QA in higher education in Europe.[14] Some examples of European seals of quality already exist (e.g. EQUIS in Management studies or the Chemistry Quality Eurolabels [15]) and others are in development (like EURACE in Engineering or EUR-INF in Informatics) and some new similar initiatives have started, e.g. in Music. There is absolutely no doubt that

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[14] Commission of the European Communities, "Report on Progress in Quality Assurance in Higher Education." Report from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM(2009) 487 final (Brussels: European Union, 2009).

[15] The EuroBachelor quality label was a very concrete outcome produced by the TNP European Chemistry Thematic Network within Tuning Europe (2004).

Tuning's Europe-wide, comparative and subject-based approach has contributed to the development of some of these European quality seals and has the potential to underpin the development of many more in the future.

These remarks are but a brief review of Tuning's many contributions to the EHEA. They show that the Tuning "vision" of the year 2000 has become a highly creative and interactive process and a powerful mover in higher education, first in Europe and soon after in other world regions. After 12 years of growth and dissemination, the experience gained by the "Tuning processes" around the world has started "coming back" to Europe and is now enriching the much-needed debate about the role and competitiveness of European higher education in the world. This became very clear at "Tuning in the World" event in Brussels in November 2012. More refined tools are being developed and new priorities are being identified.

This also means that new challenges will need to be addressed:

— *new target groups:* should Tuning specifically address degree programme planners on the basis of new concepts, like meta-profiles?
— *new dissemination tools:* should there be a wider effort to spread the Tuning approach amongst all actors involved at grass-root level (academics, administrators, managers, policy makers)? Should transversal skills related to citizenship, social commitment and ethical behaviour be promoted as a core ingredient of all programmes?
— *new processes:* should recognition procedures (e.g. for study abroad, prior learning, etc.) and corresponding QA procedures based on Learning Outcomes and competences be tested in some broad, European-wide, pilot projects?

These questions show that while Tuning has already substantially contributed to quality, relevance and innovation in the EHEA, it has the potential to continue doing so in the years ahead, which are likely to be marked by accelerated reforms required by the Knowledge era and the worldwide competition in higher education.

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Educating Higher Education Students for Innovative Economies: What International Data Tell Us.

Francesco Avvisati, Gwenaël Jacotin, and Stéphan Vincent-Lancrin[1]

Abstract: As innovation increasingly fuels economic growth, higher education institutions and systems face the challenge of equipping students with the skills required by innovative economies. Using two international surveys of tertiary education graduates five years after their graduation, we show that the innovative, tertiary-educated workforce comprises a mix of graduates holding degrees from all disciplines. The contribution to innovation of different graduates varies by type of innovation. When they assess the strong and weak points of their university education, graduates give a mixed picture of the quality of the education they have received. We then link the propensity to participate in innovation to the relative emphasis on theory and practice in university programmes and conclude by highlighting the importance of a competence-based approach to curriculum and pedagogy.

Keywords: higher education; innovation; pedagogy; skills; international comparison; qualifications; system evaluation; curriculum.

I. Introduction

What is the broad mix of skills needed in innovative societies and sectors, and how can higher education institutions and innovation policies contribute to fostering this mix? To answer this question, we analyse two international surveys of tertiary graduates five years after their graduation, covering 20 countries, namely the twin surveys Reflex and Hegesco. We show that the innovative workforce by sector of the economy and by type of innovation comprises a broad mix of tertiary education graduates, and present the likelihood of contributing to innovation for graduates in different fields. We then identify the critical individual skills used by the most innovative workforce,

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and analyse to what extent they are associated with different kinds of pedagogies. We conclude with a call for a broader focus of innovation policies, when those are limited to science and engineering, and suggest that fostering skills for innovation could be an objective of any higher education programme.

We define "skills" as the bundle of knowledge, attributes and capacities that enables an individual to successfully and consistently perform an activity or task, whether broadly or narrowly conceived, and can be built upon and extended through learning. We distinguish three overlapping categories of "skills for innovation": technical skills (know-what and know-how); skills in thinking and creativity (critical thinking, imagination, creativity); and behavioural and social skills (persistence, conscientiousness, self-esteem, communication, collaboration). They correspond to building blocks of the individual capacity to contribute to innovation.

In this article, we present findings on skills and education for innovation based on the analysis of two surveys of tertiary graduates five years after their graduation, namely the twin surveys Reflex and Hegesco. The Reflex survey on professional workers in knowledge-based societies was conducted in 2005 in 14 European countries and Japan, on the basis of representative samples of tertiary graduates (ISCED 5a). The Hegesco survey was carried out in 2008 to extend the coverage of Reflex to 5 additional European countries. The analysis of the twin surveys covers the following countries: Austria, Belgium, Czech Republic, Estonia, Finland, France, Germany, Hungary, Italy, Japan, Lithuania, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Switzerland, Turkey, and the United Kingdom. The Proflex survey provides similar information for three additional countries in Latin America (Chile, Mexico, Uruguay), but only for a sub-set of questions.[2]

Respondents were asked about the importance of 19 skills in their job, their self-assessed level in these skills, their involvement in different types of innovation, as well as questions about some characteristics of their tertiary education programme and how they assess it retrospectively. The surveys thus allow one to study the associations between the subject studied, the prevalence of different teaching activities during tertiary education, innovation and skills (self-reported). Allen and van der Velden[3] present the

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[2] The PROFLEX project, which is coordinated by the Centro de Gestión de la Calidad y del Cambio at the Universidad Politécnica de Valencia, has been kind enough to share the files of these three countries with us : its questionnaire is more or less similar to those of REFLEX and HEGESCO but did not include the innovation questions that we have used to identify the innovative workforce.

[3] Jim Allen, and Rolf van der Velden, eds., *The Flexible Professional in the Knowledge Society. New Challengesfor Higher Education* (Dordrecht: Springer, 2011).

database as well as numerous other analyses that were derived from it, including one on innovation.[4]

The analysis allows us to cast light on several questions relevant to education and innovation policy makers.

II. **A broad mix of qualifications for innovation**

A first question is about the nature of qualifications needed for innovation. One conclusion of the OECD Innovation Strategy is that innovation requires a broad mix of qualifications.[5] This conclusion has important policy implications, as innovation policies concerned with human resources tend to have a narrow focus on scientists and engineers (and sometimes entrepreneurship).

One first piece of evidence of this required mix lies in the professional qualifications sought by innovative businesses, as presented by Toner[6] for example. In 2006, the Australian innovation survey (ABS) asked businesses that innovated over the previous two years about the qualifications of the people they recruited to develop new goods or services or implement new operational or organisational/managerial processes. About half (47.4%) of innovating businesses recruited in 2004 or 2005. For their new vacancies, just 2.2% of the firms sought scientific qualifications, and 9.3%, engineering qualifications. Most frequently, these vacancies required general business skills (22.6%), marketing skills (18.2% of firms), or product management skills (10.1% of firms). The mix of qualifications sought by these innovative businesses shows differing patterns across sectors: science and engineering skills are mostly sought by innovative firms in manufacturing and resource-related industries (Mining, Electricity-Gas-Water), while innovative firms in service sectors predominantly seek marketing, general business and information technology (IT) skills.

Our analysis of Reflex and Hegesco casts additional light on this mix of skills by identifying the mix of fields studied in tertiary education by the most innovative professionals. Reflex and Hegesco include questions on the

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[4] Jean-Jacques Paul, "Graduates in the Knowledge and Innovation Society," in *The Flexible Professional in the Knowledge Society. New Challenges for Higher Education*, ed. Jim Allen and Rolf van der Velden (Dordrecht: Springer, 2011), 111-37.

[5] Organisation for Economic Co-operation and Development (OECD), *The OECD Innovation Strategy: A Head Start on Tomorrow* (Paris: OECD Publishing, 2010).

[6] Phillip Toner, "Workforce Skills and Innovation: An Overview of Major Themes in the Literature," OECD Education Working Paper no. 55, Paris: OECD Publishing, 2011, http://www.oecd-ilibrary.org/education/workforce-skills-and-innovation_5kgk6hpnhxzq-en.

involvement of professionals in innovation. Respondents are asked to report whether they work in an organisation that innovates, and whether they have a role in introducing these innovations in their organisation. We combine those questions and define "highly innovative" professionals as those working in innovative organisations *and* involved in the introduction of innovations: they represents on average 55.6% of tertiary-educated professionals in the surveyed countries.

The highly innovative workforce across different sectors comprises a varied mix of academic qualifications (Figure 1). In manufacturing industries, over 50% of tertiary-educated employees involved in innovation have an engineering
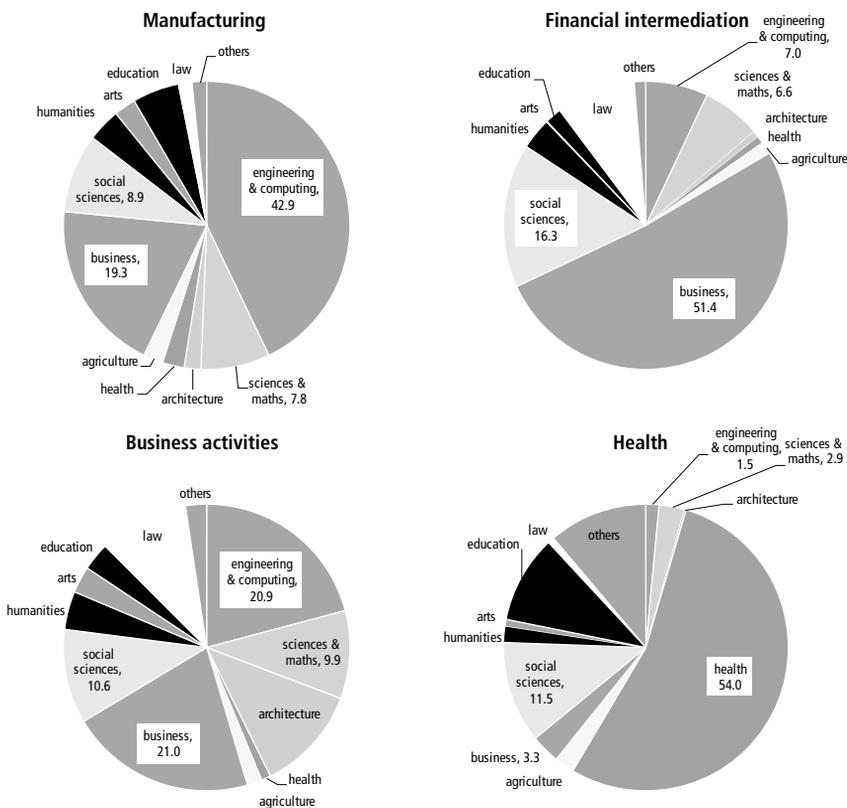

Figure 1

Field of education of the innovative workforce, by sector of activity.

Source: Authors' calculation. Based on Reflex and Hegesco.

(42.9%) and science (7.8%) degree. This proportion shrinks in business activities (including computer-related activities, research and development, consultancy and advertisement), where engineering graduates represent 20.9% of tertiary-educated employees involved in innovation and science graduates 9.9%; it is even smaller in finance, where the proportions are 7.0% and 6.6% respectively. In these service industries, the bulk of the highly innovative workforce is formed by business graduates, social sciences graduates, and law graduates.

The composition of the highly innovative workforce varies by type of innovation too (Figure 2). For example, engineering and computing graduates represent over one fourth (25.3%) of all graduates contributing to technology innovation (but only 13.5% of the total graduate workforce); they are also over-
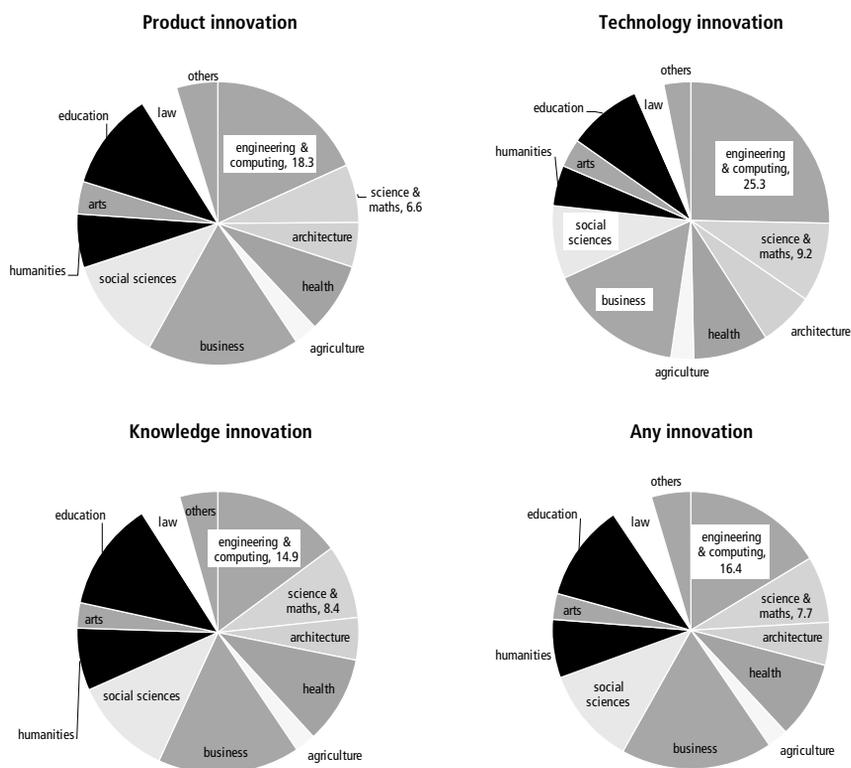

Figure 2

Field of study of the innovative workforce, by type of innovation.

Source: Authors' calculation. Based on Reflex and Hegesco.

represented among graduates contributing to product innovation (18.3%), but only slightly over-represented among knowledge or methods innovators (14.9%). Science or mathematics graduates, who represent 6.7% of the graduate workforce, are over-represented among technology innovators (9.2%) and among knowledge innovators (8.4%), but not among product innovators (6.6%).

Another way to assess the contribution of tertiary graduates from different fields to innovation lies in the likelihood that they have a highly innovative job five years after graduation. Here again, the analysis of Reflex and Hegesco shows that a significant proportion of professionals with tertiary degrees from all fields work in highly innovative jobs (Figure 3). Over 45% of tertiary graduates
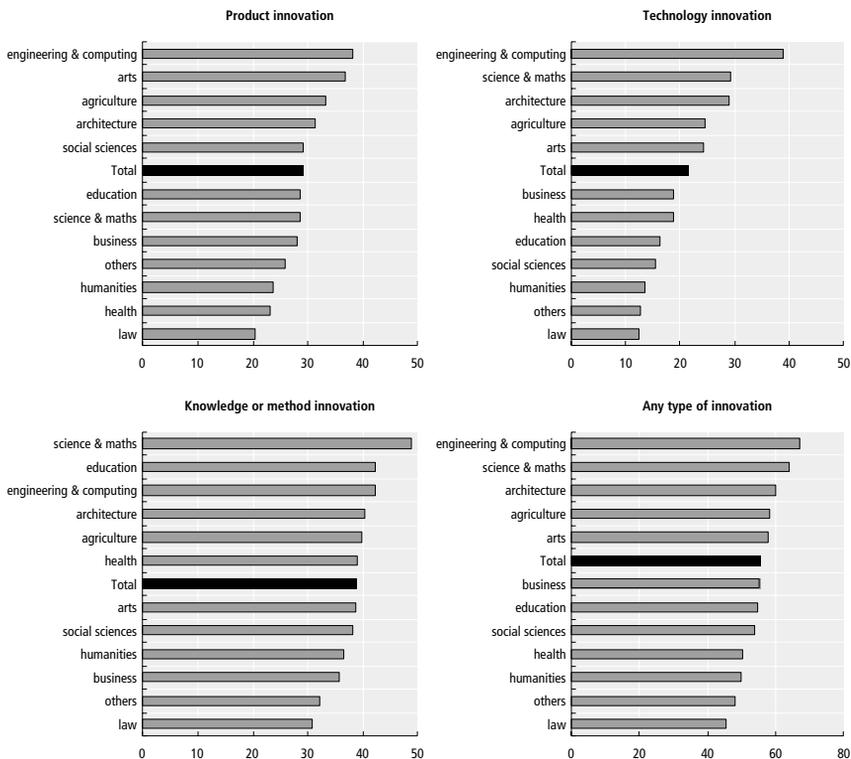

Figure 3

Percentage of tertiary graduates from specific fields having a highly innovative job.

Source: Authors' calculation. Based on Reflex and Hegesco.

from any field participate in at least one type of innovation. Science and engineering graduates are more likely to participate in some form of innovation (over 60% of them do), but a significant percentage of graduates from other fields also have a highly innovative job — 55% for a tertiary education graduate on average, and about 58% for arts and agriculture graduates. This contribution varies across types of innovation: graduates in arts and in engineering have the same likelihood of participating in product innovation. In knowledge or method innovation, the differences across fields are relatively small, whereas they are much greater for technology innovation, in which engineers are significantly more likely than others to have a highly innovative job.

As far as fields of study are concerned, the analysis of Reflex and Hegesco confirms that a broad mix of specialisations and qualifications is needed for innovation. The traditional view that innovators come mainly from science and engineering graduates is partly confirmed by our analysis: whatever the innovation type, they are among the most likely to have a highly innovative job. However, it also shows that an overly exclusive focus on the training of scientists and engineers to promote innovation is largely misplaced, given that other graduates do also contribute significantly to innovation and that the relative importance of the manufacturing sector decreases in most OECD economies.

III. Critical skills for highly innovative jobs

Professional and academic qualifications allow us to understand the extent to which certain bundles of disciplinary skills are used in the innovation process. While it is interesting to see the relevance of higher education programmes to innovation, it does not allow us to identify the specific skills that matter the most in highly innovative jobs. Reflex and Hegesco allow us to go one step further and to identify some specific skills that matter for innovation at the individual level. By comparing (self-reported) job requirements of highly innovative and non-innovative jobs, the most critical skills for innovation which distinguish innovators from non-innovators can be identified. We define "non-innovative jobs" as those held by professionals reporting that their organisation does not innovate *and* that they do not contribute to the introduction of innovation.

Respondents to Reflex and Hegesco were asked to indicate the level of 19 skills that their current job requires. Highly innovative professionals have higher job requirements for any single skill than non-innovative professionals. Highly innovative jobs are thus more demanding. The critical skills that distinguish innovators from non-innovators the most are creativity ("come up with new ideas and solutions" and the "willingness to question ideas"),

followed by the "ability to present ideas in audience", "alertness to opportunities", "analytical thinking", "ability to coordinate activities", and the "ability to acquire new knowledge" (Figure 4). These critical skills match our assumptions on individual skills for innovation.

|	any type of innovation	product or service		technology or tools	knowledge or methods
come with news ideas/solutions	3.9	3.2		2.9	3.6
willingness to question ideas	3.0	2.6		2.3	2.9
present ideas in audience	2.8	2.5		1.9	2.9
alertness to opportunities	2.7	2.7		1.9	2.6
analytical thinking	2.6	2.0		2.3	2.7
coordinate activities	2.6	2.4		1.9	2.5
acquire new knowledge	2.5	2.1		2.3	2.9
mobilize capacities of others	2.4	2.3		1.9	2.4
make your meaning clear	2.4	2.0		1.7	2.4
master of your own field	2.4	1.9		1.9	2.5
write reports or documents	2.4	1.9		1.7	2.5
write and speak a foreign …	2.2	1.7		2.0	2.1
use computers and internet	2.2	1.8		2.4	2.0
work productively with others	2.2	2.0		1.8	2.1
use time efficiently	2.1	1.8		1.7	2.2
perform under pressure	2.1	1.8		1.6	2.0
negociate	2.1	2.3		1.4	2.0
knowledge of other fields	2.1	1.9		1.7	2.0
assert your authority	1.8	1.7		1.5	2.0

Figure 4

Critical skills for the most innovative jobs, by type of innovation
Tertiary-educated workers who contribute to their organisation's innovation
activities face higher skill requirements than non-innovative graduates.

Source: Authors' calculation. Based on Reflex and Hegesco. Odds ratios correspond to the likelihood of mentioning the skill as required for workers in innovative jobs, compared to workers in non-innovative jobs. Generalised odds ratio are computed from logistic regressions controlling for country and sector of activity. The five most critical skills are highlighted for each type of innovation.

The different types of innovation, though, require slightly different skill profiles. Professionals who are contributing to product innovation report high requirements for their job especially in terms of creativity ("come up with new ideas and solutions", "alertness to opportunities", "willingness to question ideas"). For technology innovation, behind "coming up with new ideas and solutions", the most critical skills seem to be the "ability to use computers and the internet", "analytical thinking", and the "ability to rapidly acquire new knowledge". Graduates contributing to innovation of knowledge or methods, in contrast, need to complement creativity ("come up with new ideas and solutions", "willingness to question ideas") and thinking skills ("analytical thinking", "ability to rapidly acquire new knowledge") with

persuasion and communication skills ("the ability to present ideas to an audience") (Figure 4).

IV. Fostering skills for innovation in higher education

Our analysis of Reflex and Hegesco does not only allow us to identify which skills contribute to innovation, but also to start understanding better how higher education institutions can foster them. The data presented in Figure 3 show that higher education institutions and programmes do produce a large share of graduates who will contribute to innovation. Reflex, Hegesco (and in some cases Proflex) allow us to assess higher education systems in terms of skills development, but also to associate some pedagogies to subsequent innovation or to the development of certain skills.

First, respondents to the Reflex, Hegesco, and Proflex surveys were asked to give a retrospective assessment of the three top strengths and weaknesses of their higher education programmes in terms of skills development. Professionals from Europe, Japan and Latin America tend to agree that universities developed mostly their thinking and learning skills (analytical thinking and the ability to rapidly acquire new knowledge) as well as their domain-specific expertise (mastery of their own field or discipline). At the same time, students are dissatisfied with the level of social and behavioural skills acquired through their university programme: former students in Japanese and European universities are much more likely to lament shortcomings of their university programmes regarding the development of social and behavioural skills (collaboration, communication, and leadership skills) than concerning critical thinking and subject-based skills (Figure 5). Some of the critical skills for innovation only receive average assessments: "presenting ideas" comes fourth among weaknesses, and "coming up with new ideas and solutions" is not considered to be a particularly strong point of university education. There may thus be room for improvement in the fostering of these skills.

These findings can be supplemented by two recent studies using direct standardised test measures of generic skills to assess whether higher education fosters critical thinking. Two large-scale assessments of undergraduate students in the United States[7] and Colombia[8] demonstrate that genuine gains

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[7] Richard Arum, and Josipa Roksa, *Academically Adrift: Limited Learning on College Campuses* (Chicago: University of Chicago Press, 2011).

[8] Anna Rosefsky Saavedra and Juan Esteban Saavedra, "Do Colleges Cultivate Critical Thinking, Problem Solving, Writing and Interpersonal Skills?" *Economics of Education Review* 30, no. 6 (2011): 1516-26.
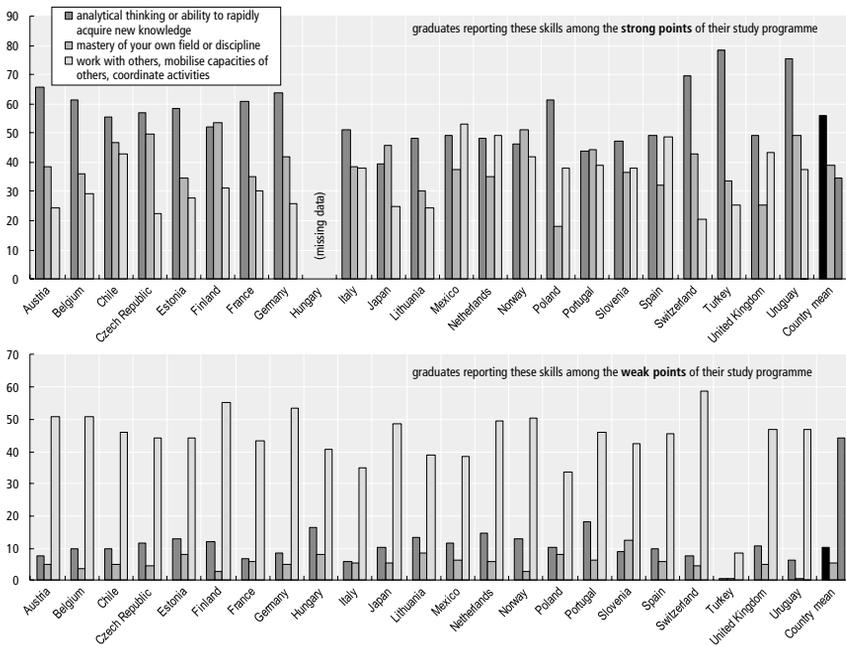
Figure 5

How professionals assess the strong and weak points of skills development in university.

Source: Authors' calculation. Based on Reflex, Hegesco and Proflex.

in non-domain specific skills can be attributed to the learning environment of the particular institution attended. The results highlight in particular the contribution of high quality higher education institutions to students' critical thinking skills. At the same time, many students do not show significant progress, and have been described as "academically adrift"; importantly, however, student progress (or absence thereof) is consistently and significantly associated with the quality of teaching and learning inputs. The OECD feasibility study on the Assessment of Higher Education Learning Outcomes (AHELO) may help to cast light on these questions in the future.[9]

A second question that we investigated is whether some higher education pedagogies are more effective than others in preparing students for highly

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[9] Organisation for Economic Co-operation and Development (OECD), *Assessment of Higher Education Learning Outcomes (AHELO): Feasibility Study Report. Volume 2 – Data Analysis and National Experiences* (Paris: OECD Publishing, 2013).

innovative jobs. Reflex and Hegesco databases can be used to characterise the pedagogy of tertiary education programmes. Using factor analysis techniques (multiple correspondence analysis), we identify two main orientations ("theory" and "practice") that distinguish programmes' profiles: each programme can then be given a "theory score" and a "practice score" based on the students' report. The theory score is mainly determined by an emphasis in the study programme given to lectures, teacher as the main source of information, as well as theories and paradigms. The practice score is mainly determined by an emphasis on group assignments, participation in research projects, internships, work placement, facts and practical knowledge, project and/or problem-based learning, and oral presentations by students.

Across most disciplines and countries, graduates are more likely to participate in innovation processes after having attended tertiary education programmes stressing practical knowledge, such as student-led projects and problem-based learning (Figure 6). Theory-based forms of instruction, such as lectures and the learning of theories and paradigms, have a positive, but weaker association with innovation.
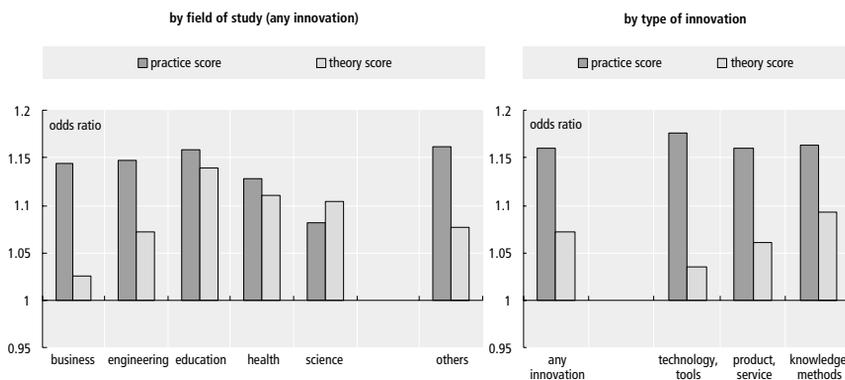

Figure 6

How innovators describe their study programme relative to non-innovators
Relative emphasis on theory- and practice-based forms of instruction.

Source: Authors' calculation. Based on Reflex and Hegesco.

In fact, the way in which graduates describe their university programme is a good predictor of how they contribute to innovation. Innovators and non-innovators indeed emphasise to a different degree practice-based forms of

instruction and theory-based forms of instruction in their description of study programmes.

The association between the pedagogical model of the university programme and the proportion of alumni contributing to innovation in their early career varies, however, depending on the field of study. At one extreme are engineering and business graduates, for whom the amount of practice-based instruction is strongly associated with subsequent innovation. In science, education and health fields, on the other hand, greater emphasis on theory-based instruction has a positive and equally strong association with innovation as practice-based instruction. This difference may result from the different ways one can contribute to innovation. Science graduates who contribute to innovation in knowledge or methods describe their programmes as particularly theory-intensive. Engineering and business graduates' ability to contribute to innovation seems to depend critically on their exposure to hands-on instruction. In general, practice-based pedagogies have a stronger association with innovation. Theory-based pedagogies are increasingly associated with innovation as one moves from technology innovation to knowledge innovation through product innovation (Figure 6).

Teaching and learning forms in higher education also have distinctive patterns of association with the level of skills self-reported by tertiary educated professionals (Figure 7). Differences in the emphasis on theoretical knowledge and conceptual understanding are particularly associated with reported ability in analytical thinking, in acquiring new knowledge, and in writing. On the other hand, differences in the emphasis of programmes on practical knowledge, on student-led projects and on problem-based learning are reflected in the level of creative skills, of oral communication skills and of teamwork and leadership skills of students ("ability to come up with new ideas and solutions", "alertness to new opportunities"; "ability to present products", "ideas or reports to an audience"; "ability to negotiate effectively", "to assert own authority", "to work productively with others and to mobilise their capacities").

Causal interpretations of these associations are not granted: students may well enrol in programmes which emphasise conceptual understanding to a high degree because they possess high analytical skills to start with, or may prefer programmes stressing practice-based methods because they are good team-workers. In other words, because students who attend different programmes have different skills strengths and interests before their enrolment, we cannot be sure that they were developed (rather than just reinforced) by their higher education programmes — or type of instruction.
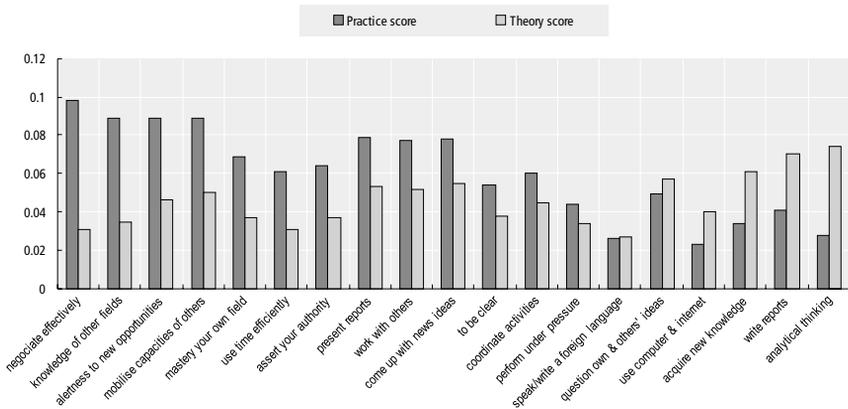
Figure 7

The effect of theory and practice emphases in university teaching on different skills (self-reported levels).

Note: Skills are ranked according to the difference between the effect size on practice-based teaching forms and the effect size on theory-based teaching forms.

Source: Authors' calculation. Based on Reflex and Hegesco.

Nevertheless, tertiary educated professionals themselves tend to attribute at least some of their current skills to the merits of particular programmes in which they enrolled (Table 1). The higher the emphasis on theory in their studies, the more likely students are to report analytical thinking skills, the ability to rapidly acquire new knowledge, and expertise in their own field as strong points of their study programme. On the other hand, the higher the emphasis on practice, the more likely it is that creativity, oral communication, teamwork and leadership skills are cited as strong points of the study programme.

In general, the associations between pedagogy in their tertiary studies and skill levels self-reported by professionals (Figure 7) are in line with the associations between pedagogy and the assessment of the strengths of their university programmes (Table 1).

The patterns of association suggest that theory-intensive programmes are particularly effective for developing thinking skills, and that practice-intensive programmes are more effective for developing creativity, teamwork, and leadership skills. A diverse offer of pedagogies is the most effective way to foster all skills for innovation in the working population.

Table 1
Theory-based programmes have distinct strong points from practice-based university programmes
Likelihood of reporting skills as strong points of the university programme, by mode of teaching and learning

		Emphasis on Practice		
		(-)	(n.s.)	(+)
Emphasis on Theory	(+)	— analytical thinking — ability to rapidly acquire new knowledge	— Mastery of your own field or discipline	— alertness to new opportunities — ability to come up with new ideas and solutions — ability to present products, ideas or reports to an audience — ability to mobilise the capacities of others — ability to negotiate effectively — ability to assert your authority
	(n.s.)	— ability to write reports, memos or documents	— ability to question your own and others' ideas — knowledge of other fields or disciplines — ability to use computers and the internet — ability to speak and write in a foreign language	— ability to coordinate activities — ability to work productively with others
	(-)	— ability to perform well under pressure — ability to use time efficiently	— ability to make your meaning clear to others	

Legend: (+) indicates a significant positive association; (-) a significant negative association; and (n.s.) a non-significant association.

Source: Authors' calculation. Based on Reflex and Hegesco.

V. **Concluding remarks**

To conclude, we point to two implications of our analysis for innovation policy makers and the tertiary education community. We first argue that innovation policies focusing on scientists and engineers should generally have a broader disciplinary focus. We then suggest that tertiary education institutions should try to foster skills that are important for innovation regardless of the discipline, and that the TUNING community should build skills for innovation as an integral part of its agenda on competence-based approaches to curriculum.

Conventional innovation policies concerned with human resources tend to try to increase the number of Science, Technology, Engineering and Mathematics (STEM) graduates, which is seen as critical for countries' innovation capacity. Our analysis suggests that innovation requires people with diverse qualifications and that innovation policies with a broader focus than STEM could be warranted, even though STEM graduates arguably play an important role in innovation. They represent an overwhelming proportion of patent holders and are highly represented among workers involved in all types of innovation, but graduates from other disciplines tend to be more involved in the innovation process than generally acknowledged.

Science and (especially) engineering graduates are highly represented among patent holders. In the United States, the National Survey of College Graduates shows that 73.8% of patent holders have a science or engineering degree. More precisely, some majors (electrical engineering, chemical engineering, mechanical/industrial engineering, and physics) are associated with a very high patenting activity (over 6% of graduates from these fields hold some patent), but the patenting activity is much lower for the remaining STEM majors.[10]

While patents are often used as a proxy for innovation intensity, they only concern a small share of innovation, as not all types of innovation need to be or can be patented. Increasing the number of STEM-trained graduates may therefore lead to a larger number of patents, granted that these graduates select into the appropriate majors, but is certainly not the only way of increasing the innovative activity in the economy. The broader concept of innovation used in Reflex and Hegesco gives a different picture. Around eight percent (7.8%) of tertiary-educated professionals in a highly innovative

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[10] Jennifer Hunt et al., "Why Don't Women Patent?" NBER Working Paper No. 17888, Cambridge, MA: National Bureau of Economic Research (NBER), 2012, http://www.nber.org/papers/w17888.

job hold a science or mathematics degree, and 16.5% a degree in engineering or computing. Graduates from STEM-related fields (agriculture, health, architecture) account for an additional sixth of the tertiary-educated highly innovative workforce (16.4%). However, half of highly innovative professionals have a background in business (17.5%), education (11.4%), social sciences (11.1%), or other non-STEM fields.

The analysis of the distribution of STEM graduates across sectors and types of innovation suggests that a focus of innovation policies related to human resources on the disciplinary competences of STEM graduates may be relevant in contexts where innovation policies are limited to the manufacturing sector and are mainly concerned with fostering technology innovation. However, given the declining share of value creation taking place in manufacturing in the OECD area, this may not be in line with the current reality of innovation.

Another reason why innovation policies try to stimulate STEM education comes from a concern about possible skills shortages in science and engineering, which could be a possible threat to innovation capacity.

This widespread concern about the falling interest in science and engineering and possible future shortages in scientists and engineers is generally not warranted. In the OECD area, the number of degrees awarded in tertiary education science or engineering programmes has continued to increase in the past decade (2000-2009). This absolute increase has been slower than the increase in the total number of degrees awarded (2.7% annual growth between 2000 and 2009 for science and 3.8% for engineering, compared to 4.4% increase annually on average), leading to a decreasing relative share of STEM graduates in successive cohorts of tertiary education graduates. There are a few exceptions though: the number of science and mathematics degree awarded each year has decreased over the last decade in Chile, Estonia, France, Greece, Ireland, Italy and Spain; and the number of engineering degrees has decreased in Chile, Estonia, and Ireland. Despite these exceptions, there is overall no strong evidence of a shortage (or coming shortage) of tertiary education graduates in STEM disciplines in the OECD area.

A second interesting result of our analysis is that the mastery of one's own field is not among the very top skills that differentiate the most highly innovative from less innovative professionals (Figure 4). This is not to say that the mastery of a field is not important. Regardless of their involvement in innovation, the mastery of one's field is reported as very important by 54% of all professionals — which makes it rank 7. Our point is more that many of the critical skills for innovation can be fostered in all domains, even though it could take a different shape from one subject to the other.

Today's STEM graduates may not be demanded for their technical skills in these subjects, but for their strengths in other skills. Indeed, science and engineering graduates earn higher salaries even in jobs that do not require their technical skills.[11] Employers may reward valued behavioural and social skills, or better thinking skills, or just the higher selectivity and prestige that characterise science and engineering in many countries. If today's STEM graduates partially owe their success to skills that are not STEM-specific, a promising way of increasing the innovative capacity of the future workforce would be to strengthen these skills for all pupils and students, irrespective of their field of study.

Several innovative models of instruction are being experienced worldwide, generally building on problem-based learning. A fashionable trend lies in design thinking, that is, the application of some specific innovation methods to solving real life problems which brings together people with different backgrounds. Design thinking has inspired various tertiary education institutions and programmes in the world, be they degree-granting or not. Examples include the d.school at Stanford University (United States), the design factory at Aalto University (Finland), the i-school at Tokyo University (Japan), or the Master's in innovation, design, entrepreneurship and arts (IDEA) at EMLyon business school and Ecole Centrale de Lyon (France), the Srishti School of Art, Design and Technology in Bangalore (India). Numerous other innovative initiatives try to develop all sets of skills for innovation by rethinking their teaching and make sure that students can get deeper and broader learning.

Given these developments and the skills needs of economies driven by innovation, a research agenda for the higher education community is to evaluate whether these programmes actually manage to develop a broader mix of skills for innovation and whether their graduates end up in highly innovative jobs. For the TUNING community more specifically, one question is whether these new questions and approaches require a retuning of TUNING. While the Bologna process has already led to a certain shift towards more skills-based approaches to higher education programmes,[12] a new challenge is to remould the disciplinary culture of the faculties that remains predominant in higher education into a skills-based culture.

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[11] Anthony P. Carnevale, Nicole Smith, and Michelle Melton, "STEM," Georgetown University Center for Education and the Workforce, 2011, http://cew.georgetown.edu/stem.

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