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TUNING Competences Frameworks: Key Tools for Educational Reform and the Assessment and Comparison of Learning in Global Perspective

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Introduction

During the last two decades the playground of Higher Education has changed fundamentally. Globalization and Information and Communication Technology have given a further push to its internationalization. The required level of quality and effectiveness of higher education programmes are no longer determined at local or national level only, but are also referenced internationally today. This does not imply that it is felt like that by the majority of academic staff. One can observe a striking difference between opinions and viewpoints of governmental authorities, management of higher education institutions, its faculties and departments and academic leaders on the one hand and the average academic on the other. One can also see differences between world regions.

Nevertheless, whether one likes it or not, in particular for the more renowned institutions in every country competition in terms of attracting academic staff, young researchers / PHD-students and master and bachelor students has moved from the national to the international scene. Academics as well as students identify and select higher institutions which serve their interests best. Due to search engines, portals, web presentations, and new forms of communication such as Facebook and other social media, this process has become a global one. As a result the student body has changed in a large and growing number of institutions as has often – partly - the language of instruction. Academics are noticing that students have become more demanding regarding the content of educational programmes as well as the learning and teaching process. Not only because they have a wider and easier access to information about higher education institutions, what is taught there, how it is taught and by whom, but also because this information is easily exchanged via social media . This involves risks, for all involved, because images and reputations can easily be built or destroyed, rightly or wrongly. This is also the case for the quality of education which is offered. At present, there is more focus on this issue than ever before. Universities develop so-called quality cultures as a result of external pressure in particular. A key question in this respect is what and who decides what high quality programmes are and on which basis?

Besides what has been said above, and besides personal development, there is another dimension which has a growing impact on the content, implementation and modes of delivery of a higher education programme: its relevance for society. Relevance is understood here in terms of preparing for citizenship and for employability. In particular employability seems to be given more and more weight and is therefore competing with the actual interests and abilities of the student. This is understandable in a situation where an economic global crisis is impacting so many, but it might lead to wrong choices, possibly followed by a growing number of drop-outs. This can be a costly affair in more than mere financially. Although the chances for obtaining employment at a suitable level after graduation for one programme might be better than for another, this does not imply that less successful programmes in this respect do not have an obligation regarding the transition to society of its graduates.

Education is simply not intended to be 'art for the sake of art'. Degree programmes are also not intended to mirror the academic profiles of the teaching staff itself in today's dynamic world. This has implications for the design and delivery of programmes as well as the for the competences which are developed and the desired outcomes.

Searching for a new paradigm

In 2001 the Tuning Educational Structures in Europe project (hereafter: Tuning) was launched with these notions in mind. At the end of the 1990th a growing concern developed among the initiators and developers of the European Credit Transfer and Accumulation System (ECTS) that one credit system would not be a sufficient answer to societal challenges and was not the only panacea for (trans)national mobility of students and cooperation between higher education institutions in and outside Europe. It was concluded that the emphasis should be much more on the outcomes of the learning process, but also that more attention should be given - within degree programmes - to transferable or general skills. It was also thought necessary to stipulate the role of higher education institutions as major contributors to the welfare of society. This fitted in a trend in which higher education institutions were forced to show that they are accountable, responsible, and sustainable. This should not apply to the higher institution only but also to the individual degree programmes on offer. A number of conclusions were drawn from this analysis:

- Higher Education structures and programmes and qualifications should be reformed on a large scale to be able to respond to the needs of society;
- Academics should be given a key role in this process;
- The reform process would require the development of internationally shared reference points / standards at disciplinary / subject area level;
- A language for communication should be developed which would be understood by all major stakeholders, that is academics, students, graduates, (potential) employers of graduates as well as professional organisations;
- All stakeholders, including (potential) employers and professional organisations, but in particular graduates should be (indirectly) involved in the process of curriculum design and quality enhancement;
- The focus should be on diversification of degree programmes by profiling and stimulating flexibility;
- The reform should facilitate national and international mobility and the recognition of periods of study, including qualifications for obtaining access to the next level of programmes.

The concept of 'competences' was chosen as a means to communicate with stakeholders despite awareness of the different meanings throughout the world attributed to the term. The basic idea was and is that the role of education is primary to make the student / learner more *competent* as a result of a learning process. Competences should be understood - according to Tuning - as a representation of a dynamic combination of cognitive and metacognitive skills, knowledge and understanding / insight, interpersonal, intellectual and practical skills, and ethical values. In other words, high level competences required to operate with confidence and success in a leading capacity in society. Besides competences Tuning also introduced as part of its methodology the concept of learning outcomes. Learning outcomes in Tuning state the level of competences to be developed in a course unit, module or degree programme.

From the onset Tuning made a distinction between general or generic competences and subject specific (disciplinary) competences. This was done to raise awareness about - in particular - the generic competences. Although they might have been taught already as part of a degree programmes, it was noticed at the time that in most cases they were not made explicit in the course material. This may have changed somewhat over time but it still seems

to be an important point of attention in many degree programmes.

Having said this, a more far reaching conclusion was drawn from the analysis made; the reform process would require a paradigm shift in the teaching, learning and assessment process. As a consequence of focusing on the outcomes of the learning process in terms of the competences to be developed, the switch should be made from input or content based learning to outcomes or output based learning. To phrase this differently: to move from a more staff-centred approach, based on the concept of learning objectives to a concept of student oriented learning, based on the concept of learning outcomes. A learning outcome is understood here as *a statement of what a learner is expected to know, understand and be able to demonstrate after completion of a process of learning*. A learning objective outlines the material the teaching staff intends to cover or the questions related to the discipline that the class will address. This last approach means in practice that the focus is on the teaching process (not the learning process) and on knowledge transfer of the academic staff member to the students. Student centred learning is an approach or system that supports the design of learning programmes which focus on the learners' achievements, accommodates different learners' priorities and is taking into consideration student workload (i.e workload that is feasible within the duration of the learning programme). It accommodates for learners' greater involvement in the choice of content, mode, pace and place of learning.

From this perspective the Tuning initiative developed two main action lines: a methodology or approach to develop current, high quality and relevant degree programmes for all levels, bachelor, master and doctorate, and internationally established reference points or subject area based competences frameworks to support the (re-)design, implementation, delivery and quality enhancement of degree programmes. This paper focuses on the latter.

TUNING competences frameworks

Having outlined above that degree programmes are no longer developed and delivered in its own right (only), but should be referenced against at least national, but preferably internationally established reference points, Tuning took the initiative for developing international competences frameworks. More or less at the same time the Quality Assurance Agency in the UK initiated the development of national based benchmark papers. In both cases a bottom-up approach was applied by making a group of academics responsible for setting-up a subject area based framework, respectively benchmark. The approach applied was slightly different, although in both cases it was based on a process of discussion and reflection. With respect to Tuning, lists of key competences were formulated which were used as a basis for consultation among stakeholders. For all subject areas / disciplines involved in the Tuning project at the time a common list of 30 generic competences was drawn up and for each individual subject area a subject area list of key competences was produced (see below). A consultation of stakeholders took place in 2001-2002 and was repeated in 2008 with more subject areas (9 instead of 7) and with a slightly adjusted and improved list of generic competences. The stakeholders consulted were academics, graduates, employers and in 2008 also students.

The consultation was based - in both cases - on different variables, that is, first:

- the degree of importance: the relevance of the competence, in the opinion of the stakeholder (for work in their profession);
- the level of achievement: the achievement of this competence as a result of having taken this university degree.

To evaluate these two variables, the respondents had to use a scale: 1 = none; 2 = weak; 3 = moderate; 4 = strong.

in addition they had to:

- rank the generic and subject specific competences; based on the categorisation of the

five most important generic and the five most important subject specific ones. The competence that was ranked highest in the survey was allocated five points, four for the second and so on, with one point for the last in the selection. If the competence was not chosen in the survey, it scored zero points.

The outcomes of the consultation were very informative and revealing and were used as input for producing the Tuning competences frameworks for the subject areas involved. What was learned in particular was the need in society for graduates with better developed generic competences. Although doing well regarding the acquisition of knowledge of and insight into the subject area, students did less well than thought necessary in developing abstract thinking, analyzing and synthesizing skills (seen by the respondents as the most important competence) as well as applying knowledge in practice, problem solving, learning abilities, and written and oral communication skills. Also more attention should be given – in particular according to employers and graduates - to leadership and teamwork competences in the learning process. Furthermore, it was advised to offer more attention to creativity and the development of an entrepreneurial spirit. These kind of consultations of the same stakeholder groups were repeated in other regions of the world with adjusted lists (based on the situation, culture and opinions of the academics of that region that drew up the lists) but with more or less comparable outcomes.

The consultations and competence lists were only one of the basic elements for developing the competences frameworks. Others were and are a description of the academic field country by country and synthesized at regional level – at first instance European and later also other regions of the world. Furthermore the typical degrees offered were mapped, as well as the social and professional needs, including the (potential) employability field, and if possible future trends were identified. The last items showed us differences between countries and higher education institutions. It was a confirmation that degree programmes have and should have different profiles, in particular at master level, and that they are also partly regionally bound.

Constructing subject area based competences frameworks

Since 2001 Tuning has built up much experience regarding the construction of (inter)national competences frameworks. As part of the European Tuning projects a large number of documents called *Reference Points for the Design and Delivery of Degree Programmes in [name of subject area]* - covering a large set of disciplines by now - have been developed. These were validated by external peers before being finalized and published. In the European context the term *Reference points* was used instead of, for example the term 'standards' (which is in use in Russia and Australia to express the same idea). Although Tuning intends to be standard setting, it wants to avoid at any cost that these reference points are regarded as prescriptive. In the dynamic world of today, they simply cannot be set in stone and therefore revision is needed every six years – preferably on the basis of a new consultation round of stakeholders. The development of the reference points was based on a common format, independent of the subject area involved.

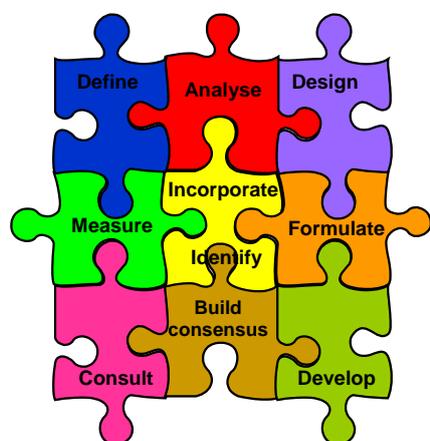
For each competences framework to be developed, a group of 12 to 15 international experts was established. Its members were selected from different countries and were representing their higher education institution in the field involved. At its start Tuning focused only on traditional research oriented mono-disciplines to be able to develop its approach and to avoid unnecessary complications. At a later stage multi-disciplinary and interdisciplinary degree programmes as well as more applied disciplines were covered as well.

The process started with the mapping process as described above and the consultation of stakeholders. As was already explained, to prepare for the consultation process a common

list of generic competences was drawn up by the different groups together and each group developed its own list of so-called key subject area competence statements which should 'frame the subject area'. This last list contained on average of 25 statements. That list was established on the basis of a collection of ideas and expectations regarding degree programmes in the subject area based on an open discussion. On the basis of the long list consensus was sought on the short list (key competences) to be used for the consultation process. Because the focus was on competences to be covered in the discipline as a whole, the first cycle / bachelor and the second cycle / master were not distinguished. To allow for the consultation process, each university draw up a list of relevant employers for its field, a list of graduates which graduated within the last 3 to 5 years and a list of academics to be consulted. In the first European consultation round (2001-2002) no (mature) students were consulted. The Tuning America Latina project decided in 2004 to involve also students. This has been standard procedure since. After finishing the consultation process, its results were analysed by each subject area group. This led to a redefining of the original subject specific competences lists. The next step in the process was to design academic and professional frameworks for each of the cycles, preferably formulated as descriptors and to build consensus on the most relevant competences for each of them, combining both what is common for academic recognition and what is different (the specific features). It was also checked whether the subject area frameworks were consistent with another recent development at the time, the establishment of a Qualifications Framework for the European Higher Education Area. This framework was endorsed in Europe by the ministers of Education in 2005 as part of the Bologna Process. Below we will come back to the complementary relationship of these so-called overarching or meta-frameworks and the subject area based frameworks.

The following step in the process of establishing competences frameworks was to check whether these frameworks allowed for a realistic student workload. In other words: to 'measure' the required student workload to achieve the desired competences levels, to be expressed in terms of credits (besides learning outcomes). This step was followed by an open discussion to identify the most suitable modes and approaches for teaching, learning and assessment to develop the competences identified. This reflection took place against the proposed change of paradigm – student centred learning – as described above. The outcome was an overview of different possibilities and strategies for each of the subject areas from which the academic staff responsible for offering the degree programmes in each institution could make their own selections and combinations. The last step was to relate the competences to consistent mechanisms for quality control and enhancement.

This approach can be visualized in the following image:



As part of the Tuning America Latina 2 Project (2011-2013) ideas about the development of competences frameworks were further refined and deepened, by introducing the concept of meta-profiles. Both reference points and meta-profiles have the aim to identify and describe the core (elements) of a discipline / subject area. However, the meta-profile approach is slightly different. While in the original approach the focus is on identifying the core or key competences, both generic and subject specific, in the second approach the focus is on the clustering of generic and subject specific competences to derive to so-called meta-competences. The interlinked groups of meta-competences then serve as the basis for defining a meta-profile (competences framework) which captures the essence of the discipline in more general terms. When the meta-profile is decided, it can be used as a template for constructing individual degree programmes.

This new method which was and is being applied later in Tuning projects in other regions of the world such as Russia, Africa and Central Asia, offers us a more sophisticated way forward, because the existing template of collecting a long list of competences and then boiling it down to the more essential ones, lacked sufficient structure.

Two main approaches have been developed for the grouping of competences. The first way is to cluster the most related competences in a feasible number of groups, minimum 5 to 8 maximum. After having done so, a label for each group is decided which reflects best its content and purpose. However, it is also possible to work the other way around, defining labels for the group's first and then using these as a basis for clustering the competences. Each group or meta-competence will contain a mix of generic and subject specific competences. This is fully in line with the Tuning philosophy, which requires that these are developed together. Although named generic and transferable skills or competences these are or should always be developed in conjunction with the main field(s) of study, and not in isolation. To illustrate this point: the competence *abstract thinking, analyzing and synthesizing* in history is based on a different theoretical and methodological framework than for example the one used in physics or mathematics. This also applies - in general - for oral and written skills, leadership, teamwork, entrepreneurial spirit etc. because each discipline has its own academic culture and paradigm.

Overarching competences frameworks

Competences frameworks are not only a fundamental basis and reference for the design of new and improvement of existing curricula, but also for the assessment and comparison of learning in a national and global context. Different levels of competences frameworks can be distinguished. While Tuning has focused on the subject area level, others, such as governments and quality assurance organisations, have initiated overarching or meta-frameworks which intend to cover all levels of learning or part of them. According to Tuning these complementary frameworks are a requirement for the restructuring and/or enhancing of the quality of higher education sector and its qualifications.

Qualifications Frameworks are not a new phenomenon, but in recent years their content and structure have changed. In principle every country has its qualifications framework or system which – in the past or still - describes the different types of qualifications offered, its interconnections, as well as pathways to progress within the system. This traditional model has been replaced now in many countries by a model which focuses on the outcomes of a learning process, be it formal or informal. As its basis descriptors are used which describe the expected / achieved learning in terms of competences and (indicated in terms of level) in learning outcomes. This new type of qualifications framework has been developed at transnational level (Europe) as well as national level.

At European level two meta-frameworks have been developed which are the Qualifications Framework for the European Higher Education Area (QF for EHEA), initiated as part of the Bologna Process, and the European Qualifications Framework for Life Long Learning (EQF for LLL). Both can be defined as an overarching framework that makes transparent the relationship between European national higher education frameworks of qualifications. The first one is based on the so-called Dublin Descriptors. These were developed in the same period in which Tuning developed its first competences frameworks (2001-2005). In March 2002 at the official Bologna seminar *Working on the European Dimension of Quality*, which took place in Amsterdam, the main conclusion was that general descriptors for the different cycles and reference points at subject area level should go together. To quote from its published report: "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')". The Dublin descriptors outline the essential components of any degree programme that leads to the completion of a Bologna cycle, that is bachelor, master and doctorate. They are based on the following *dimensions*:

- Acquiring knowledge and understanding
- Applying knowledge and understanding
- Making informed judgments and choices
- Communicating knowledge and understanding
- Capacities to continue learning
- Contributing to original research (doctorate only)

Besides the 'Bologna' QF- EHEA, the European Union established the EQF for LLL which contains eight levels, covering learning achievements at all educational levels. As far as higher education is concerned, the top 4 levels (that is 5, 6, 7 and 8) in this Framework are compatible with the three cycles, plus the short cycle (Associated Degree), included in the Qualifications Framework for the EHEA. Hence, their outcomes correspond to those foreseen in the Dublin Descriptors, even though they are expressed in a slightly different language. The EQF distinguishes three main categories to order its outcomes based descriptors: *knowledge, skills and competences*. Competences should be read here as wider competences, intending to describe responsibility and autonomy.

Within each subject area, discipline or professional sector, the QF for EHEA Dublin Descriptors and /or the EQF for LLL level descriptors can be applied and adapted according to the specific way that learning is acquired in that sector. Thus the Dublin Descriptors/EQF descriptors form general reference points at the European level in which any specific Degree Programme can be situated.

In particular during the last five years, the development of competences / learning outcomes based National Qualifications Frameworks (NQFs) has gathered considerable momentum. To establish such a framework, each country sets out its own qualifications framework according to its educational structures and traditions. A National Qualifications Framework can be described as a single description, at national level or level of an education system (for example, Scotland, England and Wales), which is internationally understood and through which all qualifications and other learning achievements may be described and related to each other in a coherent way. Good examples are the qualifications frameworks of Australia, South-Africa, Thailand, a growing number of European countries, as well as a model developed by the Lumina Foundation for the USA. A national framework enables students, employers and quality assurance and accreditation agencies to 'compare and contrast' the learning achievements of students and benchmark (i.e. position) them according to other national and regional frameworks.

The Australian Qualifications Framework (AQF) distinguishes – with regard to the higher levels – the following items: purpose and volume of learning (expressed in time) besides the categories knowledge, skills, applications of knowledge and skills. The Lumina USA Degree Qualifications Profile is – as the QF for the EHEA - based on *dimensions*: Broad, Integrative Knowledge, Specialised Knowledge, Intellectual Skills, Applied Learning and Civic Learning. In this last model more emphasis is given to the learning process as a classifying principle.

All these overarching competences frameworks have in common that they are based on broad descriptors which are general by definition because they include all types and orientations (applied, research driven etc.) of qualifications or other learning achievements.

Bridging meta-competences frameworks and Tuning subject area based competences frameworks

In 2008 the Tuning management team concluded that it would be useful to bridge the gap between the meta-level and the subject area level by developing an intermediate framework level by grouping 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. Tuning distinguishes six sectors: Humanities, Creative and Performing Disciplines, Engineering, Natural Sciences, Health Care and Social Sciences. The basic aim for developing Sectoral Qualifications Frameworks (SQFs) was and is to produce a common set of statements about expected achievement levels for students in any and all of the disciplines represented, as well as seeking to define what these disciplines have in common. The framework intends to show what sets them apart from disciplines in other sectors and give them their distinctive character as a sectoral grouping. At the start of the project period there was much doubt among the disciplinary experts whether it would be possible to find sufficient common ground. During the project these hesitations were slowly replaced by enthusiasm about the opportunities a SQF would offer.

From 2008 to 2010 a first project was implemented: the development of a Tuning Sectoral Qualifications Framework (SQF) for the Social Sciences. The sector was represented by the following academic areas: Business Studies, European Studies, Education Sciences, Occupational Therapy and Social Work, Law, Psychology and International Relations. The project designed a SQF which covers the higher education sector levels 5 to 8 as well as the preceding levels 3 and 4. Its development proved to be a pioneering and innovative experience, but most of all a major step forward towards linking the different initiatives – QF for the EHEA, EQF for LLL, NQFs and Tuning Subject Area based Reference Points, - so far.

The Social Sciences SQF-project was followed by a project in which two SQFs were developed, one for the Humanities and another one for the Creative and Performing Disciplines. While the Social Sciences SQF project group limited itself to define competences statements covering the broad categories of knowledge, skills and (wider) competences, the other two SQF project groups went a step further. Initiated by the Creative and Performing Disciplines *dimensions* were identified to organize the competences statements. The catalyst for generating mutual belief in the validity of a joint sectoral framework came from the realisation of the central role played in the Creative and Performing Disciplines by the dimension of *Creativity* (making, performing, designing, conceptualising) in all of the disciplines represented. Also for the Humanities such a central dimension could be identified in the concept of the *Human Being* (human condition, experience and expression).. In the framework of the OECD TUNING-AHELO project which aimed to develop a *Conceptual Framework of Expected/Desired Learning Outcomes in Engineering* (2009) a set of dimensions for organizing the competences was decided as well. It is intended to develop SQFs based on dimensions for the other three other sectors in the near future. The following table offers an overview of the dimensions identified for the three sectors covered so far:

Table 1: SQF Dimensions

Humanities Dimensions	Creative and Performing Disciplines Dimensions	Engineering Dimensions
The Human Being	Making, Performing, Designing, Conceptualising	
Cultures and Societies	Re-thinking, Considering and interpreting the Human	Basic and Engineering Sciences
Texts and Contexts	Experimenting, innovating & Researching	
Theories and Concepts	Theories, Histories and Cultures	Engineering Analysis
Interdisciplinarity	Technical, environmental and Contextual issues	Engineering Design
Communication	Communication, Collaboration & Interdisciplinarity	Generic Skills
Initiative and Creativity	Initiative & Enterprise	Engineering Practice
Professional Development	Professional Development	Professional Development

The development of Tuning Sectoral Frameworks based on dimensions seems to be a breakthrough. They not only bridge the two European meta-frameworks and national frameworks globally but also the meta-profiles / reference points at subject area level. The three 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.

The following table offers descriptors of the first two dimensions of the Tuning SQFs for the Humanities and the Creative and Performing Disciplines. It illustrates the kind of information about what is actually (or should be) taught and learned in the framework of degree programmes which belong to the sectors involved.

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	<ul style="list-style-type: none"> • 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,	Have advanced knowledge	Have the advanced skills	Be able to draw upon the

Performing, Designing, Conceptualising	of the processes and concepts underlying creation and/or performance in their specific discipline	necessary to create, realise and express their own creative concepts	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
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

This information should be used as a reference for the designing of individual degree programmes. The expression 'reference' is used here to express that each degree programme will and should have its own individual profile. The profile of a degree is not only defined by the competences framework but also by the mission of the institution, the role foreseen for its graduates in society, the particular strengths of the department offering the degree in terms of particular expertise(s), as well as the financial means available. According to the philosophy of student centred learning and therefore that of Tuning, degree profiles should be developed by the team of academics involved in offering the degree / qualification. This team, which includes preferably one or more mature students, formulates the learning outcomes followed by the outline of the degree programme and its individual modules. This structure should allow for covering the development and achievement of all learning outcomes defined in such a way that in terms of student workload the programme is realistic and feasible. For the development of new programmes and enhancement of existing programmes Tuning has developed a ten steps approach, which is included in the publication *A Tuning Guide to Formulating Degree Programme Profiles*. Bilbao, Groningen, The Hague, 2010.

Tuning competences frameworks: tools for comparison and assessment of learning

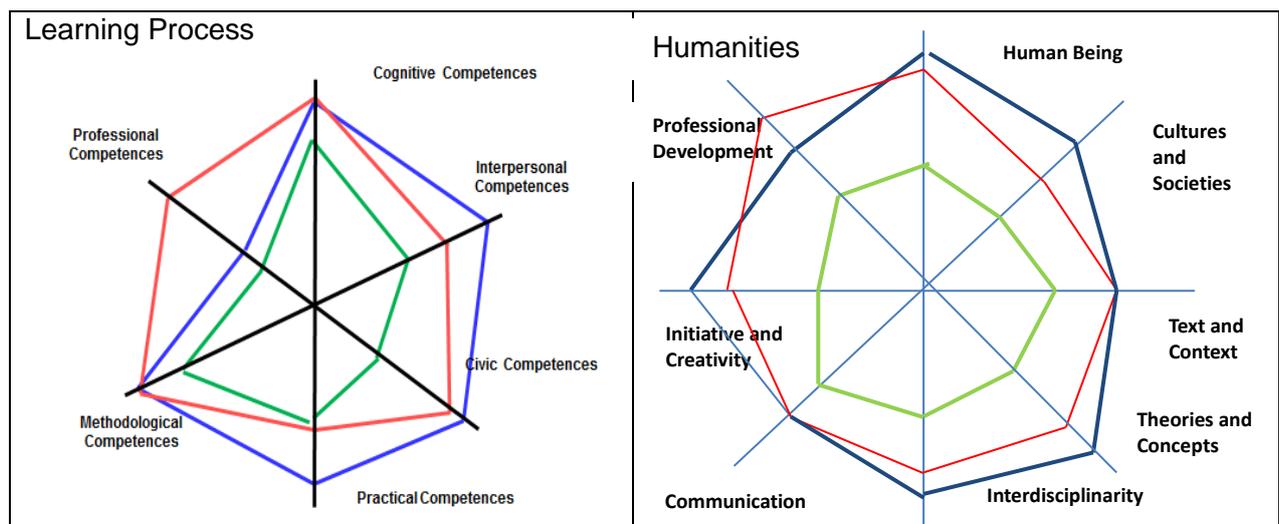
The AHELO project has shown us that a Tuning competences framework is the foundation of an assessment framework for allowing comparisons regarding the level of achievement of learning in a particular subject area / discipline in transnational perspective. An assessment framework measures the level of achievement of individual learners but also of a system. This system can be the department within an institution, a local or regional system or a national system. In combination with meta-competences frameworks and sectoral

frameworks, the Tuning competences frameworks are also important tools for recognition of periods of learning as well as of qualifications.

With the exception of the TUNING-AHELO conceptual frameworks, which were developed in a global setting, all other Tuning competences frameworks were defined regionally: Europe, Latin America, Africa, Russia. We can observe that in the different Tuning projects two main types of meta-profiles, or combinations of these have been developed. The first one focusses on the learning process; the second one derives from the subject area or an academic sector. Both are based on dimensions.

The dimensions identified for the 'learning process approach' are for example: Cognitive Competences, Interpersonal Competence, Civic Competences, Practical Competences, Methodological Competences and Professional Competences. The dimensions of the subject area approach are reflected in the table above.

Both models can be used to develop and to position individual degree programmes according to their own profile. These can be visualized as spiderwebs against the background of agreed competences statements of the Tuning subject area based competences frameworks. Depending on its mission and role and its academic strengths the different dimensions identified are more or lesser developed than the levels indicated in the meta-profile. This web visualizes individual profiles of a bachelor, a master and a PhD-programme:



Legend:
 Green = First cycle / Bachelor
 Red = Master
 Blue = Doctorate

As was stated earlier, Tuning has developed competences frameworks already for a large number of subject areas. All these frameworks cover the first and second cycle of higher education, that is the bachelor and master, and often also the doctorate. It is important that frameworks are developed which cover more than one level. It forces the designers / experts to decide on the level of achievement that can or should be developed for each of the competences levels involved. It will guarantee that a good balance is defined. Below, an example derived from the subject area of Architecture, is offered. This academic field decided to develop its competences framework on the basis of the SQF for the Creative and Performing Disciplines, not the one for Engineering. The reason for this choice was that the experts of the European Tuning subject area group of architecture identified themselves

much more with the dimension of creativity than the dimension of modelling (typical for Engineering). Descriptors were developed for the levels 6 to 8 of the EQF, covering bachelor, master and doctorate.

Table 3: Levels of mastering competences, the example of Architecture:

ARCHITECTURE			
EQF Categories:	Knowledge	Skills	(Wider) Competences
Architectural Creation & Architectural Creativity			
Level/ Dimension	<i>Graduates of Architecture are expected at level ...</i>		
6 / Conceptualising, Designing, Materialising Architecture	To have advanced knowledge of the processes, concepts and cultural values guiding architectural creation	To have the advanced skills to formulate critically , elaborate creatively and translate innovatively into spatial forms their own architectural concepts	To be able to draw upon the knowledge and skills gained within their architectural studies so as to act and respond critically and creatively in different situations
7 / Conceptualising, Designing, Materialising Architecture	To have highly advanced knowledge of the processes, concepts and cultural values guiding architectural creation, some of which will be at the forefront of their field	To have developed to a high professional level their ability as architects to formulate critically , elaborate creatively and translate innovatively into spatial forms their own architectural concepts	To emerge as well-developed personalities, able to draw upon the knowledge and skills gained within their architectural studies so as to act and respond critically and creatively in situations that are complex, unpredictable and require new strategic approaches
8 / Conceptualising, Designing, Materialising Architecture	Knowing in depth all the relevant methods and techniques of inquiry related to a particular field of study of architecture	Integrating previous experience so as to demonstrate original creative insights in the domain of architecture Functioning with complete creative autonomy	Comprehending the transferability of their research capabilities to other fields Displaying professional, creative and scholarly integrity

From the above it can be learned that different phrasing is used to indicate each level. The Tuning experience has learned – as is also shown in the table - that level is indicated by complexity and scope.

When developing a measurement instrument it is not only very important to have agreement on the level of mastery or achievement. This level will be expressed in the form of a learning outcome for that particular competence. That learning outcome, however, will still be rather general, and therefore it is necessary to break it down in (for example 3) indicators. These indicators in turn are supported by (for example 5) descriptors or assessment criteria, which cover the level of attainment. This subdivision is made for each generic and subject area / disciplinary competence to be assessed / measured. Also in this respect, Tuning has developed examples of good practice. With regard to the generic competences the publication of Aurelio Villa Sánchez & Manuel Poblete Ruiz, eds., *Competence-based learning. A proposal for the assessment of generic competences*. Bilbao, 2008 is referred to. It is also advised to consult this publication when developing or enhancing an individual degree programme.

Conclusion

This paper started with the assumption that the higher education sector is challenged by dynamisms of society, such as globalism and information and communication technologies, which have raised (global) competition between higher education providers in terms of outcomes of achievement and level of appropriateness of what has been learned by its graduates to serve today's society/ies.

An analysis of the situation has shown that higher education institutions should take their responsibility to respond to the needs of society. These needs are most of all well-educated graduates which have the knowledge, skills and competences to operate successfully in that society. To educate such graduates a change of paradigm of the educational model in use is required, which means in practice a move from a staff-centred approach to a student oriented approach. This last model implies that stakeholders groups are involved in the design, delivery and enhancement of the quality of degree programmes. It also implies that a language is used which is well understood by all parties. Such a language has been proposed and developed by Tuning, by using the concepts of competences and learning outcomes. Furthermore, Tuning has outlined a methodology for (re-)designing degree programmes, and it has developed competences frameworks both at sectoral and subject area level, against which individual degree programmes can be referenced.

It has been demonstrated in this paper that not only these Tuning competences frameworks at subject area level (meta-profiles) but also overarching competences frameworks, such as the Tuning SQFs and the European and National Qualifications Frameworks, are essential instruments for reforming the higher education sector and its degree programmes. In particular the Tuning meta-profiles allow for comparison of (the level of) learning. Therefore, they form the backbone of any instrument for measuring learning at sectoral / subject area level in a comparative setting, locally, nationally, regionally and globally. Level descriptors and indicators as developed by Tuning allow for fair measurement of performance and comparison of learning.

Why is it important to compare learning achievements of programmes and systems with another? It will first and foremost show us their relative strengths and weaknesses. This is important information in today's world, which requires transparency and accountability. It will offer the precise data to enhance degree programmes in a sophisticated way, by allowing us to focus on its weaker elements. When the performance indicators are linked - as part of the assessment instruments - to civil and employment needs and requirements, it will also make it possible to tailor the programmes better to those. However, it has to be stressed that according to Tuning, higher education institutions and their academics should remain responsible for content and form of their higher education programmes. Nevertheless, serving society best is a role of academics for which they can and should take full responsibility as the Tuning experience has shown us. The new approach as explained in this paper, will allow academia to show what high quality programmes are. It also allows to prove that it is doing its job well.