QUALITY ENHANCEMENT

QUALITY ENHANCEMENT AT PROGRAMME LEVEL: THE TUNING APPROACH

1. Introduction

The Tuning project recognises the growing interest in *quality* in higher education all over Europe. There is a growth in the number of quality units at institutional level looking at internal quality as well as an increase in newly created quality agencies evaluating quality from the perspective of external agents. Furthermore, there is a firm belief among the relevant players that quality is at the heart of the construction of the European Higher Education Area. This is reflected in the ENQA policy paper *Standards and Guidelines for Quality Assurance in the European Higher Education Area* which has been endorsed by EUA, EURASHE and ESIB and approved at the Bergen summit by the European ministers of education.

The term 'quality' in higher education is often ambiguous. It is commonly used as a kind of short hand, to represent different understandings of what the essential components of quality are, and what the best methods of creating or guaranteeing their existence might be. Tuning keeps in mind that the general objective of the entire higher education sector must be to create, enhance and guarantee the best and most appropriate experience of higher education possible for the student. Different strategies and various actors, working at different levels of the process certainly must be involved in the process of guaranteeing that quality in this general sense is achieved. However Tuning members believe that in final analysis the responsibility for developing, maintaining and increasing quality in higher education lies with Universities and their staff, with the contribution of students and other stakeholders. Other actors and levels have important roles in stimulating and in checking achievement, but if academic staff and students are not deeply, sincerely and intelligently involved in developing and enhancing quality, outside agents will be able register the existence of problems, but they will not be able themselves to create and implement quality programmes.

Tuning's specific task is to create common understanding and appropriate tools for Universities to develop, maintain and improve quality in higher education programmes in the broad European context. In this chapter we will concentrate on what we see as the most important strategy towards building mutual trust and understanding, as well as ensuring recognition of qualifications and periods of study, that is, developing quality at the level of study programmes.

In the Bologna context any programme should be of relevance for society, lead to employment, prepare for citizenship, be recognized by academia and sufficiently transparent and comparible to facilitate mobility and recognition. Furthermore, it should be understood, valued by and thought to be sufficiently attractive to appeal to significant numbers of good students, either in a national and/or an international context. The adequacy of the approach to achieve the objectives, consistency and coherence of the constituent elements of the programme are further proofs of its quality.

The Tuning project has provided a foundation for quality enhancement by developing appropriate transparency tools and a dialogue with stakeholders. The creation of an environment where more than 135 acknowledged European experts from nine different subject areas have been able to work together constructively, has allowed them to reach points of understanding and convergence; they have been able to reflect jointly on the

meaning of quality, and respond to its growing importance in the higher education sector, offering guidance especially for the design, implementation and delivery of curricula.

Among the various criteria used in judging quality, we find the terms 'fitness **for** purpose' and 'fitness **of** purpose'. The former, often used in quality assurance activities, means determining whether the academic strategies are suitable for achieving the declared aims of a programme. The latter means determining whether the aims of the programme are suitable or not. In the Tuning view, to develop true quality, 'fitness for purpose' has meaning only when the fitness of purpose itself is thoroughly established and demonstrated. As a consequence Tuning holds that quality in programme design and delivery means guaranteeing both "fitness for purpose" (i.e. suitability for achieving the declared aims of each programme), and "fitness of purpose" (i.e. suitability of the aims of each programme: these should meet the expectations of students, academic staff, employers and the broader ones foreseen in the Bologna Process). Guaranteeing "fitness of purpose' requires a strong connection with research and academic standards as well as a consideration of employability which is only implicit in the "fitness for purpose" definition.

Tuning sees its particular role as that of encouraging *quality enhancement* at programme level and providing tools to develop it. As a working definition for Tuning, *quality enhancement* means *a constant effort to improve quality of programme design, implementation and delivery". The Tuning approach is based on a set of consistent features:*

- *an identified and agreed need:*
- *a well described profile:*
- *corresponding learning outcomes phrased in terms of competence:*
- *the correct allocation of ECTS credits to the units of the programme:*
- *appropriate approaches to teaching, learning and assessment.*

All this delineates and depends on establishing an on-going process based on built-in quality enhancement mechanisms and an awareness of its importance, that is, a "quality culture".

2. Tuning methodology

The Tuning project has drawn attention to the importance of competences as the basis for the design, implementation and delivery of study programmes. The concept of competences implies the use of learning outcomes as well as credits, preferably ECTS credits, as guiding principles. Tuning distinguishes subject specific competences and generic competences. According to the Tuning methodology learning outcomes should be expressed in terms of competences. Learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of learning. They can refer to a single course unit or module or else to a period of studies, for example, a first or a second cycle programme. Learning outcomes specify the requirements for award of credit. Learning outcomes are formulated by academic staff. Competences represent a dynamic combination of knowledge, understanding, skills and abilities. Fostering competences is the object of educational programmes. Competences are formed in various course units and assessed at different stages. Competences are obtained by the student. Competences can be developed by the student to a higher (or lower) degree than expected by the learning outcomes. The level to which competences are obtained is expressed in a mark or a grade.

Study programmes which have been set up according to the Tuning methodology are output-oriented and, preferably, modularized. A modular system has the advantage of being transparent. It will promote and facilitate finding of a correct balance between learning outcomes and their related student workload expressed in ECTS credits.

For Tuning the design of a programme is a decisive element for its quality and its relevance for society. Badly designed programmes will not only have a negative effect on the output of the number of successful students and the average time to finish the programme, but also on the level of citizenship and employability of its graduates.

As part of the first phase of the project, Tuning developed a step by step approach for designing a study programme[28]. This model identifies the following key elements:

- Necessary resources must be available;
- A need must be demonstrated and be established through a consultation process of relevant stakeholders;
- The degree profile must be well described;
- A set of desired learning outcomes have to be identified and expressed in terms of generic and subject specific competences;
- Academic content (knowledge, understanding, skills) and structure (modules and credits) must be estabished and described;
- Appropriate teaching, learning and assessment strategies to achieve the desired learning outcomes must be identified;
- An appropriate evaluation and quality assurance and enhancement system focussing in particular on the consistency and implementation of the curriculum as a whole must be set up.

It must be remembered that each programme is a unit with its own identity, defined aims and purpose. Therefore, quality indicators need to be built from within as a normal and substantial element, not in the sense that they should be standardised norms, but rather that they should be criteria which respond to the uniqueness and coherency of the specific plan.[29]:

In the framework of this paper it seems useful to discuss the elements listed above in greater detail:

1. A pre-condition for delivering a programme is the availability of **resources**. The quality of these resources directly affects the quality of the programme. Resources include the availability and quality of academic staff, supporting staff and, in the case of workplace learning, the workplace supervisors. The environmental conditions and facilities available for teaching and research are also relevant. Both require permanent monitoring and improvement. In the case of academic staff this means for example that opportunities are made available and promoted for making staff aquainted with new approaches to learning and teaching.
2. To demonstrate the **need** for a degree programme a broad consultation process is required. This consultation process should not only include the academic community, but also professionals and professional bodies and employers and other stakeholders. To obtain useful information Tuning has developed a set of questionnaires focussing on generic as well as subject specific competences. The outcome of these questionnaires forms input for the definition of international reference points for a subject area. Other input comes from the (global) academic

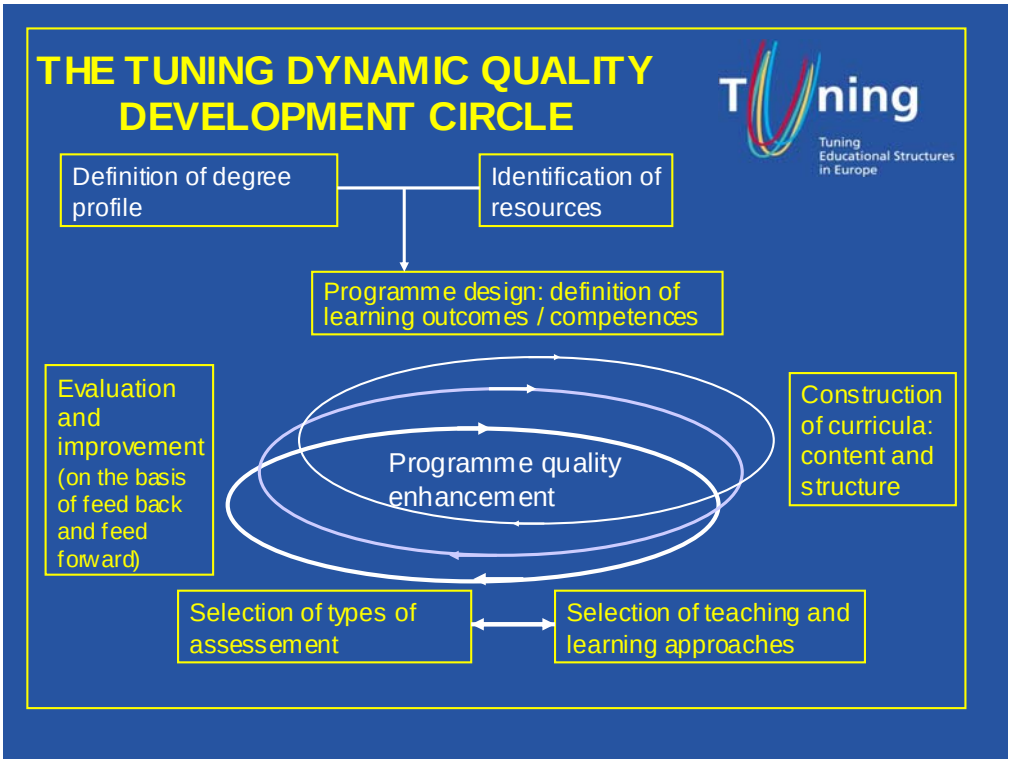
[28] Julia Gonzelez and Robert Wagenaar, eds., *Tuning Educational Structures. Final Report. Phase One* (Bilbao- Groningen, 2003, p. 51.

[29] Jones, Gareth (2003). Discussion Paper. Physic group. Imperial College, London, based on similar principles adopted in the IDEA League. See also: QAA, *Code of practice for the assurance of academic quality and standards in higher education. Section 7: programme approval, monitoring and review* (London, May 2000).

community of the specific field. This community has a decisive role in defining the academic reference points for this field. However, in the end it is the academic staff responsible for the programme, taking into account the identified reference points and the orientation and competences of available members of staff, which actually designs the programme. Although diversity of competences and orientation is necessary in order to have quality in departments, faculties and universities, there must also be coordinating structures which guarantee coherence and make **change** possible. Crucial in this respect are the so-called change agents, e.g. directors of studies, heads of departments, executive boards and councils etc., responsible for the design, approval, delivery and management of programmes. Changes are difficult to implement when they are not widely supported. Therefore, a broad spectrum of academic staff and students' views should be consulted so that the curriculum and educational approach is understood and supported by both staff and students.

3. For each study programme there should be a degree or qualifications **profile** that clearly defines the aims and purposes of the programme. Further clarity can be obtained by formulating these aims in the form of intended learning outcomes (statements of what the graduates should know, understand and be able to do), expressed in terms of the subject-specific and generic competences to be achieved. Curriculum design and student assessment should be coherent with this degree profile.
4. The curriculum design process should consider the **academic content** and **level** to be reached but it should also consider that one major goal in higher education is to promote autonomous learning and autonomous learners - which has implications for teaching and learning methods and the overall student **workload** in terms of ECTS credits. The curriculum should not overload students with excessive and redundant content. Curriculum design should consider the employability of graduates and the development of citizenship as well as their academic and intellectual training.
5. An **evaluation** scheme should be in place to monitor and review the operation of each study programme. The monitoring process should involve the systematic collection and analysis of statistical information on key indicators such as examination success rates, progression of students to employment or higher degrees, student recruitment numbers, response to evaluative questionnaires, feedback of partner institutions, etc. The results should be made known within the university. Various **feedback and feedforward loops** should be in operation. These should involve students, alumni and academic staff, operating on the same or different time-scales. In particular, there should be provision for obtaining and acting on information from student questionnaires and from student representatives. The purpose of the feedback loops is to correct deficiencies in delivery and/or design of the curriculum. The feedforward loops are intended to identify expected developments, which should be taken into account when improving and/or developing programmes. In the case of programmes incorporating workplace learning or professional competences, feedback should be obtained from the stakeholders involved as to the suitability in practice of the students' competences and hence their employability.

The above listed principles for setting-up and improvement of programmes have been visualized by Tuning in the *dynamic quality development circle*: already presented above, in the discussion of Tuning methodology in chapter 1.



This model is based on the assumption that programmes can and should be enhanced on the basis not only of feedback but also of feed forward by taking into account developments in society as well as the academic field concerned. This is illustrated by the progressive spiral loops in the diagram.

In order to facilitate institutions in programme design, implementation and delivery, Tuning has developed a comprehensive **List of key questions** to be considered in initiating or developing a degree programme.Its usefulness has already been validated in practice as is shown in the examples annexed to this paper. This tool is included in this paper as Annex 1

Because society is always changing and academic fields are developing, education has to be a dynamic process. Tuning is convinced that periodic external or internal quality assurance checks are insufficient for developing and maintaining true quality. The focus, rather, should be on the constant improvement and updating of the programme. It follows that the evaluation process(es) must be carried out in a particular way. Individual teaching and learning units / modules should not be assessed and evaluated by themselves, but rather in the framework of the overall programme.

A curriculum evaluation can be considered under three main headings:

- the educational process,
- the educational outcome and
- the means and facilities required for programme delivery.

Each of these main headings contains a number of elements to be considered:

Educational Process:

- degree profile (aims of the educational programme)
- learning outcomes to be achieved and competences to be obtained

- degree/educational programme structure and order of programme components to ensure progression
- coherence of degree / educational programme
- division of workload over the semester and the academic year
- feasibility of programme (check)
- teaching, learning and assessment methods
- connection with secondary education
- international cooperation and student mobility

Educational outcome:
- study rate, cessation of study and switch-overs (output)
- output of 1st and 2nd cycle
- employability

Means and facilities required:
- structural and technical facilities
- staff and material means
- student support: student counsellors

The different elements identified above are proposed in a **Checklist for Curriculum Evaluation**. The checklist is based on 14 'premises' or statements which describe an ideal situation. In practice this ideal will be difficult to realize, but it is *the responsibility of academic staff and students* to come as close to it as possible. The Checklist is annexed to this chapter as Annex 2. It can be used in combination with the **List of Key Questions** included as Annex 1. Both should be seen as practical tools to help programme committees to design, implement, deliver, monitor and enhance study programmes.

3. Tuning's further role in quality enhancement

Besides offering methodological frameworks and practical tools for the design, implementation and delivery of study programmes, Tuning has a further role in that it is a pan-European network of academics. The potential role of networks with regard to the issue of quality is mentioned in the Berlin Communiqué. Tuning is a network of academics representing both European countries and their own institutions, which formally selected them for the project. The key role of academics within institutions is stressed in the Trends III report, where it is said:

"If the enormous potential of using the Bologna objectives as a trigger for long-needed, fundamental and sustainable reforms of higher education in Europe is not to be wasted, the voice of the academics, within the institutions, will need to be heard and listened to more directly in the Bologna Process".[30]

Networks of academics can significantly contribute to the appreciation of the value of quality as well as to the elaboration of concepts in terms that are meaningful in different cultural contexts. This, in relation with quality, is a great asset, as the creation of shared meanings can contribute greatly to the development of a quality-oriented European Higher Education Area. Networks can also have an effective role in the dissemination and socialization of these concepts.

The Tuning project works in a European, transnational context, where recognition is one of the central issues. Recognition based on comparability and transparency is at the core of the

[30] "Trends III, Conclusions". (op.cit.)

Tuning project. A basic task of Tuning is to provide useful reference points for creating comparable, readable, programmes based on degree profiles described in a language of learning outcomes. Learning outcomes are expressed in terms of generic and subject-specific competences, with a clear definition of level and a well-focused teaching, learning and assessment approach. This is a significant step forward along the path towards recognition, as it provides a basis on which to:

- Formulate reference points based on internationally shared concepts and contents regarding what constitutes each subject area in the broad sense, distinguishing specializations and study programmes based on mapping;
- Develop mutually shared criteria and methodologies regarding quality assurance at programme level;
- Offer elements of comparability at national and international level;
- Build trust in internal evaluation systems that are mutually understood and jointly built;
- Enhance interest for recognition procedures at programme level within the institutions.;
- Facilitate ENICS and NARICS in their work of recognizing the degrees;
- Use available resources effectively to develop systems of reference and data keeping which can be compared and understood in the different countries.

As a transnational network, Tuning provides a unique platform for implementing the *principles* which have already been identified as *underpinning quality in European higher education*:

Relevance. In a student-centred educational system obviously a key value for any degree programme is its relevance for students as well as society. A programme should be based on academic, professional and social development, intellectual endeavour, employment and citizenship in an European environment. Being competence-based, the Tuning approach facilitates dialogue with employers and social actors. It pursues the identification of relevant academic and professional profiles and demands clarity about the needs that degree programmes intend to meet.

Comparability and compatibility. Using the Tuning methodology European degree programmes can be designed as compatible and comparable with other European programmes, through the use of common reference points, jointly agreed and expressed in generic and subject related competences. This methodology allows for true comparability, while showing a clear respect for the diversity of curricula, paths of learning and culturall ethos. The inclusion and development of ECTS also provides higher levels of comparability and compatibility through the use of student workload as a tool for planning and monitoring whole degree programmes as well as their component parts.

Transparency. This is a necessary characteristic of any study programme and must be built into it from the beginning]. There must be transparency in the outcomes, in the process, in the learning resources, in the quality systems and in data maintenance. Transparency is connected to readability, requiring the use of a language which can be understood by students, employers and other stakeholders alike in a transnational society. Transparency includes a correct use of ECTS credits for defining student workload and of the Diploma Supplement as well as of the other ECTS tools.

Mobility and transnational education. The creation of the European Higher Education Area requires a reliable and high quality mobility system. In turn, the experience of mobility contributes greatly to the full development of a strong and vital European Higher Education Area. Physical mobility, for well-structured periods of study as well as for complete degree programmes, increases quality with respect to the European dimension of education, the

capacity for professional employment in the European labour market and European citizenship. Transnational education is a powerful force for bringing institutions together and for developing common quality enhancement mechanisms.

A high quality system of mobility must guarantee full recognition of periods of studies and degrees, as well as appropriateness for the student of the activities undertaken at a host institution. ECTS is the key system on which to build recognition. Tuning has facilitated recognition by fully developing the ECTS accumulation function, through the consistent use of learning outcomes, expressed in terms of competences, as well as workload.

Attractiveness. In a European education area which seeks to be attractive to third countries quality must be guaranteed. The quality mechanisms developed at the national level by the different countries must be combined and further developed in order to be perceived and understood as a European system. The Tuning project provides a quality enhancing methodology for designing degree profiles and developing curricula, including those for joint degrees, formulating learning outcomes and competence and measuring student workload. It already provides a common language for the teaching, learning and assessment of competences, which will be further developed to include quality indicators.

Universities are creating their own methods and systems for the development of an internal quality culture. They need to monitor the start-up and the development of their academic activities and programmes in a way which is coherent with core academic values and with their specific mission.[31] Tuning provides an approach for designing or redesigning and developing study programmes according to the tenets of the Bologna process.

The general results of Tuning provide useful input for all Higher Education institutions, while the results regarding subject areas offer specific European reference points which can be used for quality enhancement at disciplinary level.

The subject area/disciplinary level is the appropriate context for:

- using the experience of academics representing different educational traditions;
- requesting the views of professional bodies and other related stakeholders in each field, thus maintaining a dynamic dialogue about social relevance and adequacy;
- focussing on developments in each subject area, thus developing a dynamic approach to thresholds and reference points;
- relating courses and degrees to maps of professions and academic and professional profiles in an international context;
- promoting a shared vision of quality development within a subject area while recognising and respecting the diversity of the approaches being used;
- comparing curricula and approaches to learning, teaching and assessment, in order to map the areas, facilitate mutual understanding, identify core competences and common standards at the different levels;
- encouraging employability studies at the European level with an emphasis on diversity and innovation;
- contributing significantly to the development of cycle(level) descriptors used in the construction of national and European Frameworks of Qualifications.

[31] Sursock, Andrée, 'Reflection from the Higher Education Institutions Point of View. Accreditation and quality Culture on the European Dimension of Quality', *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*, eds. by Don F. Westerheijden and Marlies Leegwater,. Zoetermeer, 2003 .

It is within a subject-area that the level of academic development of a programme can be best understood and measured in terms of quantity as well as quality.

4. Some practical tools and examples of good practice

In this chapter, the importance of the development of a quality culture at programme level is stressed, focussing on design, implementation and delivery. Different elements around which such a culture have been identified. Special attention is given to the role of Tuning in this respect. Two practical tools, already been mentioned above and annexed to this paper: will be useful in the process of designing or redesigning, improving and evaluating curricula. These are the *Tuning List of Key Questions* (Annex 1) meant as a basic tool for programme design, delivery, maintenance, monitoring and improvement in a national as well as an international setting. Annex 2 offers a *Tuning Checklist for Evaluating Curricula*. A third annex offers five examples of good practice, showing how the Tuning approach or a number of its elements can be and have been used in practice. The first three examples show how the Tuning approach can be used to (re)design study programmes according to the Bologna three cycle system at institutional and faculty level as well as at the level of a department and a study programme. The last two examples focus on the evaluation process. What all have in common is the objective to enhance the quality of study programmes in a coherent and transparent way.

The first example is that of Groningen University, in particular the Faculty of Arts, where in a systematic way a large number of study programmes have been re-designed according to the basic assumptions of the Bologna three cycle structure by using the Tuning approach. It offers – in more general terms – an overview of the steps that have been made during the process of redesigning, planning and implementing the new bachelor and master programmes. As a follow-up of the reform process the Faculty of Arts developed its own Tuning based internal quality culture system which became operational in the Spring of 2005.

The second example, presented by the Department of History of the University of Coimbra shows, at departmental level the usefulness of the Tuning methodology for re-defining a study programme (History in this case), on the basis of a profile and related learning outcomes. It also makes clear the relevance of this approach for assuring programme quality.

The third example gives an overview of the principles underlying university degree programme design and quality management as developed and used in the Physics Department of Imperial College London, which were subsequently adopted and enhanced by the IDEA League. These principles are fully in accordance with the Tuning approach concerning curriculum design, delivery and enhancement.

The fourth example, developed by the University of Helsinki, offers a methodology for the enhancement of the quality of study programmes on the basis of an evaluation matrix. The matrix focusses on eight areas of quality or results: teaching and research, teaching goals, leadership of teaching, teaching, learning results (including assessment), resources, feedback and follow and postgraduate studies. It distinguishes four levels of quality: only satisfactory, needs developing, good and excellent.

The University of Deusto offers the fifth example of good practice. This example shows how in a systematic way competences can be evaluated. The generic competence ‘teamwork’ has been chosen as an example of this approach.

5. Using Tuning to enhance quality in programme design and delivery

To sum up, Tuning offers powerful tools for enhancing quality in programme design and delivery. Of course, quality is also affected by elements depending on national, local or institutional contexts. Nonetheless Tuning findings and Tuning tools can be used by institutions and their staff everywhere to manage programme development in the Bologna context in an effective way that fosters learner-centred cultures.

Tuning provides an overall framework for developing student-centred degree programmes. It shows how to design programmes with full consideration the final result - that is, how the graduate will be equipped for life in the real world after completing the learning process - while keeping in mind professional and personal development as well as citizenship. It also makes it possible to describe programmes by using a language that is understood in the same way across Europe and beyond, thus ensuring comparability, transparency and attractiveness.

In fact, Tuning's starting point is to design programmes which can achieve meaningful learning outcomes within a given time framework. Learning outcomes are not formulated in terms of disciplinary contents but rather in terms of knowledge and abilities acquired. Such knowledge and abilities are expressed and conceptualised as subject specific and generic competences, that is, what a student will know and be able to do at the end of a given learning process.

The Tuning competence-based approach makes it possible to consult stakeholders, including students, and to describe in clear language what the specific goals of each programme are. These 'goals' constitute the degree profile, which is connected to the professional role the graduate is expected to carry out and to the academic standards s/he is expected to achieve in the subject area. By using workload-based credits, learning and teaching activities can be organized in a consistent and efficient way.

Any degree programme must develop subject specific competences, that is, knowledge, skills, abilities and values, specifically needed for the subject area(s). Tuning already provides discipline-based reference points for subject specific competences in many subject areas: it has established an approach and a common language through which similar tools are being developed for the remaining subject areas.

Each of the subject areas already involved in Tuning has also defined the level to which the various competences must be developed in a first or a second cycle degree. These are general descriptions which can be used for reference in any institution or in any country, while respecting any national or local academic tradition and any cultural, economic or social consideration. In the future, Tuning expects to produce cycle-level descriptors for the third or doctoral cycle as well.

Particularly novel in Tuning is the focus on 'generic competences', which until now have not been explicitly taken into account in most academic programmes. For each programme choices will be made about which generic competences are most relevant for its graduates and appropriate learning/teaching/assessment activities will be organised on that basis. Tuning not only provides a common language for defining generic competences; it also furnishes many concrete examples from a wide variety of subject areas on how to foster and enhance them.

Naturally, in planning learning and teaching activities to achieve the intended learning outcomes, institutions must be constantly aware of the time framework established. Workload-based ECTS credits make it possible to plan activities effectively as they take into

account all the time that must be dedicated to learning, teaching and assessment activities and hence provide a crucial tool for effective programming.

ECTS credits are only one of the Tuning tools for creating environments in which the necessary learning outcomes can be achieved. Each country, each discipline and even each institution has its own teaching/learning and assessment tradition. Tuning has put these traditions into contact: by sharing knowledge and experience, a wide range of effective methods and techniques for forming individual competences has been gathered and described. This material concerns both subject specific and generic competences and comes from many subject areas. It is available for institutions to use, in order to develop their own approaches. Tuning findings indicate that using a variety of approaches to learning and teaching in each programme gives the best results.

Assessment should be the crucial tool for understanding whether a degree programme is successful. It should be based on ascertaining whether the learner has actually achieved the planned goals. Since these are formulated in terms of learning outcomes expressed in competences, assessment must be conceptualised and organised in such a way as to evaluate to what extent those competences have been achieved.

Again Tuning has gathered and elaborated examples of good practice coming from a variety of countries and subject areas. These are available for institutions and can be utilised to design assessment methods suitable to a competence-based approach.

Naturally, programme design and delivery must be continually monitored and evaluated to find out whether the aims are actually being achieved and whether they continue to be appropriate or should take into account changes and developments in the subject areas and in society. An increasingly important element will be changes and development in each subject area in the pan-European context. The Tuning tools and approach will allow institutions to monitor, evaluate and improve both their own programmes and their joint and international degree programmes in this broader context. Thus Tuning provides a path for quality enhancement at programme level.

Prepared by Julia Gonzalez, Ann Katherine Isaacs, Maria Sticchi-Damiani and Robert Wagenaar with contributions from Joaquim Carvalho (University of Coimbra), Gareth Jones (Imperial College) and Kristiina Wähälä (University of Helsinki) .