PART ONE

Preliminary Remarks

This final report consists of two parts. **Part One** gives an overview of the results of the first phase of the project *Tuning Educational Structures in Europe* (2001-2002). These outcomes are summarised in six chapters: Introduction, Aims and objectives, Generic competences, Subject-specific competences, New perspectives on ECTS as a transfer and accumulation system of credits and Approaches to teaching and learning, assessment and performance, and quality. These chapters are followed by a final one: General conclusions and recommendations.

In **Part Two** of this final report more extensive information is offered regarding the four different lines, that have been used to approach the analysis of degree programmes. For the first two of these lines questionnaires were used to collect basic data and trigger a reflection process by the academics involved in the project. For three out of four lines extended papers have been written which are all included in this part of the report. On all papers agreement was reached by the members of each of the subject area groups or, in the relevant cases, by all participants. Part Two also contains a survey of the length of study programmes in terms of academic years / credits for all countries and disciplines which have been represented in the project. Furthermore, a List of the most relevant documents and the Web addresses where these can be found (so-called WWW Goldmine), as well as a Glossary of terms, have been included.

The Management Committee of the Project in general and the Project co-ordinators in particular are extremely grateful for the commitment and efforts of all those who have participated in this highly significant project. The European Commission, and especially the Directorate General Culture and Education is thanked not only for its

generous financial support but also for its advice and moral support. Gratitude is owed also to the more than 100 hundred higher education institutions which have been directly involved in the project, as well as to the European University Association which has been of a great support. Without the help of these institutions and bodies the project would never have obtained the attention and had the impact which it has had so far.

Introduction

In this publication the Socrates-Erasmus project *Tuning Educational Structures in Europe* presents a summary of the outcomes of the period 2001-2002, its first phase. At the end of 2000 the project was submitted to the European Commission as a 2-year pilot project, co-ordinated by the University of Deusto in Bilbao, Spain, and the University of Groningen, the Netherlands. From the very start the ambitions were set very high. After two years of extremely hard work by all involved in the project the ambitions have proven to be realistic and without modesty it can be stated that most aims and objectives have been met.

The Tuning project, as it has become known, began and developed in the wider context of the constant reflection within higher education, demanded by the rapid pace of change in society. But the project is particularly marked by the context of the Sorbonne-Bologna-Prague-Berlin process, through which politics aims to create an integrated higher education area in Europe, against the background of one European economic area. The need for compatibility, comparability and competitiveness of higher education in Europe has arisen from the need of students, whose increasing mobility requires reliable and objective information about educational programmes on offer. But besides this, also (future) employers in (and outside) Europe require reliable information about what a qualification, a degree stands for in practice. One European social and economic area thus goes hand in hand with one European higher education area.

The rational behind *Tuning* is the implementation at a university level of the process following the Bologna Declaration of 1999, by making use of the experiences built up in the ERASMUS and SOCRATES programme since 1987. In this respect, *the European Credit*

Transfer and Accumulation System (ECTS) is of particular importance. The project focuses on *generic* and *subject-specific competences* of *first* and *second cycle* graduates. In addition, it has a direct impact on academic recognition, quality assurance and control, compatibility of study programmes on European level, distance learning and lifelong learning. In other words: all issues mentioned in the Prague Communiqué of June 2001 are addressed by *Tuning* and viewed as parts of a whole. It is expected that in the intermediate and longer run the results of the project will affect most if not all European Higher Education institutions and programmes in general and educational structures and programmes in particular.

Focus on structures and content

The Tuning project does not pay attention to educational systems, but to educational *structures* and *content of studies.* Whereas educational systems are primarily the responsibility of governments, educational structures and content are that of higher education institutions.

As a result of the Bologna Declaration, the educational systems in most European countries are in the process of reforming. This is the direct effect of the political decision of education ministers to converge. For Higher Education institutions these reforms mean the actual starting point for another discussion: the *tuning* of curricula in terms of structures, programmes and actual teaching. In this reform process the academic and professional profiles required by society should play an important role besides the objectives set by the academic community. But even these profiles are not sufficient. Equally important is the expression of the level of education to be achieved in terms of *competences* and *learning outcomes.*

Why the name Tuning?

The name *Tuning* has been chosen for the project to reflect the idea that universities do *not* look for harmonisation of their degree programmes or any sort of unified, prescriptive or definitive European curricula but simply for points of convergence and common understanding. The protection of the rich diversity of European education has been paramount in the Tuning project from the very start and the project in no way seeks to restrict the independence of academic and subject specialists, or damage local and national

academic authority. The objectives are completely different: *Tuning* looks for common reference points.

Tuning has been designed as an independent university driven project, which is co-ordinated by university staff members from different countries. The participating higher education institutions cover all EU en EFTA countries. The European Commission and the institutions involved financed the project. For phase one of the project (2000-2002) an *Inner Circle* and an *Outer Circle* of institutions were established. The Inner Circle consisted of five so-called subject area groups, *Business Administration*, *Education Sciences, Geology, History* and *Mathematics*, which included a total of 76 higher educational institutions. Two thematic networks, *Physics* and *Chemistry*, worked closely together with the project as the groups six and seven, making up a total of around 100 institutions.

Besides the seven subject area groups, the so-called *Synergy groups* were represented in the project's *Steering Committee*. They are: Languages, Humanitarian Development, Law, Medicine, Mechanical Engineering and Veterinary Sciences. Other members of the Steering Committee were the two general project-co-ordinators, the subject area co-ordinators and higher education experts, representatives of the European University Association, of Lifelong learning, of the National Agencies and three representatives of the **accession** countries. The project has been co-ordinated on a daily basis by the general project co-ordinators and their project-assistants in close co-operation with the other members of the *Management Committee*: the Higher Education experts and subject area co-ordinators. One expert and one subject area co-ordinator were responsible for each of the seven subject-area groups.

The Outer Circle of *Tuning* consisted of institutions that were interested in the project, but could not be active participants as members of the Inner Circle. *Tuning* kept this group informed about all important developments in the project.

Tuning methodology

In the framework of the Tuning project a methodology has been designed to understand curricula and to make them comparable. As part of the methodology the concept of learning outcomes and competences was introduced. For each of the mentioned subject areas these have been described in terms of reference points to be met. According to *Tuning* these are the most relevant elements in the design, construction and assessment of qualifications.

By learning outcomes we mean the set of competences including knowledge, understanding and skills a learner is expected to know/ understand/demonstrate after completion of a process of learning — short or long. They can be identified and related to whole programmes of study (first or second cycle) and for individual units of study (modules). Competences, can be divided into two types: generic competences, which in principle are subject independent, and subject specific competences. Competences are normally obtained during different course units and can therefore not be linked to one unit. It is however very important to identify which units teach the various competences in order to ensure that these are actually assessed and quality standards are met. It goes without saying that competences and learning outcomes should correspond to the final qualifications of a learning programme.

Competences and learning outcomes allow flexibility and autonomy in the construction of curricula and at the same time they are the basis for formulating commonly understood level indicators.

In total, four lines of approach have been developed: 1) generic competences and 2) subject-specific competences (skills, knowledge and content), 3) the role of ECTS as a transfer and accumulation system and 4) approaches to learning, teaching, assessment and performance in relation to quality assurance and control. In the first phase of the Tuning project the emphasis has been on the first three lines. The fourth line received less attention due to the time constraint but will be central in the second phase of the project (2003-2004).

Each line, in turn, has been developed according to a well defined process. The starting point was collecting updated information about the state of the art at the European level. This information was then reflected upon and discussed by teams of experts in the seven subject-related areas. This was followed by further discussion and agreement among wider groups of experts in the different fields. These teams were made of people from each of the EU and EFTA countries. It is the work in these teams —validated by related European networks— that provides understanding, context and conclusions which could be valid at a European level.

Management Committee of the Tuning project,
Julia González (University of Deusto)
Robert Wagenaar (University of Groningen),
Project co-ordinators.

Bilbao and Groningen, January 2003.

Aims and Objectives: What the Tuning project is and what it is not

Tuning seeks to «tune» educational structures in Europe, by opening a debate aimed to identify and exchange information and to improve European collaboration in the development of quality, effectiveness and transparency. *Tuning* does not seek to develop any sort of unified, prescriptive, or definitive European curricula, nor does it want to create any rigid set of subject specifications, to restrict or direct educational content and/or to end the rich diversity of European higher education. Furthermore, it does not want to restrict the independence of academics and subject specialists or to damage local and national autonomy.

When developing the project the following main aims and objectives were identified:

— To bring about a high level of Europe-wide convergence in Higher Education in the five, later seven, main subject areas (Business, Chemistry, Education Sciences, Geology, History, Mathematics and Physics) by defining commonly accepted professional and learning outcomes.
— To develop professional profiles and desired learning outcomes and competences in terms of generic competences and subject-related competences including skills, knowledge and content in the seven subject areas.
— To facilitate transparency in the educational structures and to further innovation through communication of experience and identification of good practice.

—To create European networks able to present examples of good practice, encouraging innovation and quality in the joint reflection and exchange, also for other disciplines.
—To develop and exchange information in relation to the development of curricula in the selected areas, and develop a model curriculum structure expressed in reference points for each area, enhancing the recognition and European integration of diplomas.
—To build bridges between this network of universities and other appropriate qualified bodies in order to produce convergence in the selected subject areas.
—To elaborate a methodology for analysing common elements and areas of specificity and diversity, and for finding ways to tune them.
—To associate with other subject areas where a similar process can be incorporated through synergy.
—To act in a co-ordinated manner with all the actors involved in the process of tuning educational structures, in particular the Bologna follow-up group, Ministries of Education, Conferences of Rectors (including the EUA), other associations (as EURASHE), Quality Assurance Organisations and Accreditation Bodies, as well as universities.

From the aims and objectives the step can be made to the different lines of approach that has been developed. As stated before, four lines are distinguished: generic competences, subject specific competences, new perspectives on ECTS as an accumulation and transfers sytem and approaches to teaching and learning, assessment and performance and quality. As part of line 1 the significant features of the Tuning approach are explained.

Line 1

Generic Competences

One of the key objectives of the Tuning project is to contribute to the development of easily readable and comparable degrees as well as to the understanding, «from inside», and in a European joint manner, of the nature of each of the two cycles described by the Bologna process.

In searching for perspectives which would facilitate mobility of professionals and degree holders in Europe, the project tried to reach Europe-wide consensus in the understanding of degrees from the point of view of what these holders would *be able to perform*. In this respect, two choices marked the project from the start:

—The choice to reach common points of reference.
—The choice to focus on competences and skills (always based on knowledge).

The choice to use common points of reference and not degree definitions shows a clear positioning along three complementary lines: if professionals are to move and be employed in different countries of the European Union, their education needs to have certain levels of consensus in relation to some *commonly agreed* landmarks recognised within each of the subject-specific areas.

Besides, the use of reference points makes provision for *diversity, freedom and autonomy*: These conditions can be maintained by selecting and combining crucial elements in different ways, by taking complementary or alternative options, by following different paths etc. Diversity, freedom and autonomy mark European identity and could never be left out in a truly European project.

The provision of reference points also accommodates for *dynamism*. These agreements are not written in stone but are constantly developing in an ever-changing society.

Another significant feature of *Tuning* is the choice to look at degrees in terms of learning outcomes and particularly in relation to competences. The Tuning project deals with two types of competences: generic competences (instrumental, interpersonal and systemic) and subject-specific competences (including skills and knowledge. First and second cycles have been described in terms of *agreed and dynamic reference points*: learning outcomes and competences to be developed/achieved. The beautiful thing of comparable competences and learning outcomes is that they allow flexibility and autonomy in the construction of curricula. At the same time, they are the basis for formulating commonly understood level indicators.

In this respect, while the subject area related competences are crucial for any degree and refer to the specific attributes of a field of study (line 2), the generic competences identify shared attributes which could be general to any degree, such as the capacity to learn, decision making capacity, project design and management skills, etc. which are common to all or most of the degrees. In a changing society where demands tend to be in constant reformulation, these generic competences and skills become of great importance. Furthermore, most of them can be developed, nourished or destroyed by appropriate or inappropriate learning/teaching approaches or materials.

The choice for competences as dynamic reference points in the Tuning project makes a contribution in a number of ways:

a) *Further transparency in academic and professional profiles in degrees and study programmes and a growing emphasis on outcomes*

In the reflection on academic and professional profiles, competences emerge as a guiding principle for the selection of the kind of knowledge that may be appropriate to specific purposes. It has an in-built capacity to choose what is appropriate from a wealth of possibilities.

The emphasis on students getting a specific competence or set of competences may also affect the transparency in the definition of the objectives set up for a specific educational programme. It does so by adding indicators that can be measured accountably, while making these objectives more dynamic and responsive to the needs of society and employment. This shift normally leads to a change in the approach to educational activities, teaching materials and a great variety of educational situations, since it fosters the systematic involvement of

the learner, individually and in groups, in the preparation of relevant contributions, presentations, organised feedback, etc.

Besides, the shift in emphasis from input to output is reflected in the evaluation of student performance, moving from knowledge as the dominant (even the single) reference to (include) assessment centred on competences, capacities and processes. This shift is reflected in the assessment of work and activities related to student development towards pre-defined academic and professional profiles. This shift is also shown in the variety of approaches to assessment (portfolio, tutorial work, course work…) being used, as well as in situational learning. The use of competences and skills (together with knowledge) and the emphasis on outputs adds another important dimension that can balance the weight given to the length of study programmes.

The definition of academic and professional profiles in degrees is intimately linked with the identification of competences and skills and decisions on how students should attain them within a degree programme. To reach this aim, the work of isolated academics is not sufficient. The issue needs to be approached in a transversal way through the curricula of a particular degree programme.

Transparency and quality in academic and professional profiles are major assets in relation to both employability and citizenship, and the enhancement of quality and consistency as a joint effort should be a priority for the European Institutions. The definition of academic and professional profiles and the development of the fields of required competences, add quality in terms of focus and transparency, purpose, processes and outcomes.

b) *Development of the new paradigm of student-centred education and the need to focus on the management of knowledge*

A change is taking place in the teaching/learning paradigm, where approaches centred on the learner are becoming increasingly important. The need to recognise and value learning could also be seen as having an impact on qualifications and on the building of educational programmes leading to degree qualifications. In this context, the consideration of competences side by side with the consideration of knowledge offers a number of advantages which are in harmony with the demands emerging from the new paradigm.

This involves a move from teaching-centred to learning-centred education**.** Reflecting on the different aspects which characterise this trend, the relevance of focusing on competences becomes apparent. The previous paradigm involved an emphasis on the acquisition and

transmission of knowledge. Elements in the changing of this paradigm include: education more centred on the student, the changing role of the teacher, further definition of objectives, change in the approach to educational activities, shift from input to output, and a change in the organisation of learning.

The interest in the development of competences in educational programmes is in accordance with an approach to education as primarily centred on the student and his/her capacity to learn, demanding more protagonism and higher quotas of involvement since it is the student who ought to develop the capacity to handle original information and access and evaluate information in a more varied form (library, teacher, internet, etc.).

This approach emphasises that the student, the learner is the focus. It consequently affects the approach to educational activities and the organisation of learning, which shifts to being guided by what the learner wants to achieve. It also affects assessment in terms of shifting from input to output and to the processes and the contexts of the learner.

c) *The growing demands of a lifelong learning society and more flexibility in the organisation of learning*

The «society of knowledge» is also a «society of learning». This idea automatically places education in a wider context: the continuum of lifelong learning, where the individual needs to be able to handle knowledge, to update it, to select what is appropriate for a particular context, to learn permanently, to understand what is learned in such a way that it can be adapted to new and rapidly changing situations.

The growth of different modes of education (full time, part time…) changing contexts and diversity also affect the pace or rhythm at which individuals and groups can take part in the educational process. This also has an impact not only on the form and structure of programme delivery but in the whole approach to the organisation of learning, including better focused programmes, shorter courses, more flexible course structures, and more flexible delivery of teaching, with the provision of more guidance and support.

Employability, in the perspective of lifelong learning, is considered as best served through a diversity of approaches and course profiles, the flexibility of programmes with multiple exits and entrance points and the development of *generic competences.*

d) *A consideration for highest levels of employability and citizenship*

In fact, the relationship between reflection and work on competences and employment is a longstanding one. The search for a better way to predict successful performance in the work place, beyond measurements of intelligence personality and knowledge, is often regarded as the initial point. This emphasis on work performance continues to be of vital importance. Relevance in the context of the Salamanca Convention relates particularly to employability, which needs to be reflected in different ways in the curricula «depending on whether the *competences* acquired are for employment after the first or the second degree.»

From the perspective of the Tuning project, *learning outcomes* go beyond employment to contain also the demands and standards that the academic community has set in relation to particular qualifications. But employment is an important element. In this context competences and skills can relate better and may help to prepare graduates for solving crucial problems at certain levels of employment, in a permanently changing economy. This needs to be one of the points of analysis in the creation of programmes and units through constant reflection and evolution.

The consideration of education for employment needs to run parallel with education for citizenship, the need to develop personally and to be able to take social responsibilities. According to the Council's follow-up report to the Lisbon Convention, it is also essential to facilitate the access of all to education.

e) *An enhancement of the European dimension of Higher Education*

In the creation of the European Higher Education Area, the joint consideration of competences together with knowledge by European universities will contribute to the development of easily readable and comparable degrees, and a system essentially based on two main cycles. Furthermore, the joint debate on the nucleus of competences and the articulation of levels and programmes by European networks can clearly enrich the European dimension of Higher Education. It also builds on the consistency of systems of accreditation by increasing information on learning outcomes, and contributes to the development of common frameworks of qualifications, hence promoting understanding, clarity and the attractiveness of the European Higher Education Area. Besides, an increase in transparency of learning outcomes and processes will definitely be a further asset for the encouragement and

enhancement of mobility, not only of students, but particularly of graduates and professionals.

f) *The provision of a language more adequate for consultation with stake holders*

Change and variety of contexts both require a constant check on social demands for professional and academic profiles. This underlines the need for consultation, and constant revision of information on adequacy. The language of competences, since it comes from outside higher education, could be considered more adequate for consultation and dialogue with groups not directly involved in academic life, and can contribute to the necessary reflection for the development of new degrees and for permanent systems of updating the existing ones.

In the Tuning project, the need for consultation responded to:

—The wish to initiate the joint discussion on this field of competences and skills at the European level, based on consultation with groups from outside academia (graduates and employers) as well as from a broader base in relation to academics (beyond Tuning representatives from each of the subject areas involved).
—The attempt to gather updated information for reflection on possible trends and the degree of variety and change all over Europe.
—The desire to start from experience and reality in order to reach levels of diversity or commonality between the different countries, starting the debate from specific questions with a concrete language.
—The importance of focusing the reflection and debate at three different levels: the *institutional level* (the basis for any other to take place), the *subject area level* (a reference point for the HE institutions) and the *aggregate level* (a second reference point in relation to the situation at European level).

The Tuning project consulted with graduates, employers and academics in 7 subject areas (Business, Chemistry, Education Sciences, Geology, History, Mathematics and Physics), from 101 university departments in 16 European countries, by means of questionnaires, to which a total of 7,125 people responded (comprising 5,183 graduates, 944 employers and 998 academics). This is not to mention the informal teamwork, reflection and debate provoked at the level of departments, disciplines and countries. The consultation dealt with both generic and subject-specific skills and competences.

Thirty generic competences were selected from three categories: instrumental, interpersonal and systemic. Respondents were asked to rate both the importance and the level of achievement by educational programmes in each competence, and also to rank the five most important competences. The questionnaires were translated into 11 languages and sent by each participating institution to 150 graduates and 30 employers of graduates in their subject area. The questionnaire for academics was based on 17 competences judged most important by graduates and employers. For each of the competences, the respondents were asked to indicate: the importance of the skill or competence for work in their profession and the level of achievement of the skill/competence that they estimated they had reached as a result of taking their degree programme.

One of the most striking conclusions is the remarkable correlation (0.97304 Spearman correlation) between the ratings given by employers and those given by graduates all over Europe.

If we select only three aspects, some conclusions can be drawn:

—In relation to *importance*, these two groups consider that the most important competences to be developed are: capacity for analysis and synthesis, capacity to learn, problem solving, capacity for applying knowledge in practice, capacity to adapt to new situations concern for quality, information management skills, ability to work autonomously and teamwork.

—At the other end of the scale, there appear: understanding of cultures and customs of other countries, appreciation of diversity and multiculturality, ability to work in an international context, leadership, research skills, project design and management, and knowledge of a second language. One striking aspect is the concentration of the «international» competences in the lower part of the scale with respect to importance. This opens a number of questions which would need further analysis.

In relation to *achievement*, the items which appear highest in the scale, in the opinion of the graduates are: capacity to learn, basic general knowledge, ability to work autonomously, capacity for analysis and synthesis, information management skills, research skills, problem solving, concern for quality and will to succeed. Six of these items coincide with those that graduates and employers consider important and rank highest in the scale. The remaining ones reflect the tasks which the universities have traditionally been performing for centuries.

At the bottom of the scale, the competences are: leadership, understanding of cultures and customs of other countries, knowledge

of a second language, ability to communicate with experts in other fields, ability to work in an international context, and ability to work in an interdisciplinary team. It is remarkable that all of these competences also appear near the bottom of the table for importance.

As regards the *variation of ranking and the impact by country*, there are 13 items showing no variation at all. Among them there are three of the competences which appear at the top of scale and also two of those at the bottom. Ten items show a very mild country effect while seven competences show a significant country effect.

It is obvious that the indicators are bound to input and perception. They are also, as the rest of the project, time bound. European Higher Education Institutions and society itself is in the process of rapid change and the answers and the debate relate to the present rather than the future. They also have a context: the purpose.

Further debate is required but some indicators of what is considered more or less important for some relevant groups are provisionally on the table for consideration and reference.

It is at the level of subject-specific competences, however, where the Tuning project makes perhaps its greatest contribution, since those subject-related competences are crucial for identification of degrees, for comparability and for the definition of first and second-degree cycles. Each of the groups has identified a list of competences related to their subject and consulted with other academics to reflect on the relative importance of these competences and their best location at the level of first and second cycle. Because of the close relationship between this reflection and knowledge, this analysis appears in line 2.

Line 2

Subject Specific Competences

In addition to the generic competences —many of which hopefully are developed in all study programmes— each learning programme will certainly seek to foster more specific subject competences (skills and knowledge). The subject related skills are the relevant methods and techniques pertaining to the various discipline areas, e.g. analysis of ancient scripts, chemical analyses, sampling techniques and so forth, according to the subject area.

One of the objectives of *Tuning* has been to develop level qualifications for the first and second cycle. In the *Tuning* framework these qualifications are called learning outcomes. As already stated before, learning outcomes can be defined as statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of a learning programme. A distinction has to be made between shared descriptors for higher education qualifications in general and subject-specific qualifications.

It seems reasonable that the more «general» learning outcomes should be pursued in the first cycle. However, these «general» learning outcomes are to a certain extent subject dependent. Having said this, *Tuning* suggests that, in general, at completion of the first cycle, the student should be able to:

—show familiarity with the foundation and history of his/her major (discipline);
—communicate obtained basic knowledge in a coherent way;
—place new information and interpretation in its context;
—show understanding of the overall structure of the discipline and the connection between its sub disciplines;

—show understanding and implement the methods of critical analyses and development of theories;
—implement discipline related methods and techniques accurately;
—show understanding of the quality of discipline related research;
—show understanding of experimental and observational testing of scientific theories.

The completion of a first cycle programme is the entry requirement for a second cycle programme. The second cycle will usually be the phase of specialisation, although this is one of the possible models. In any case, the student who graduates as a second cycle student must be able to carry out independent (applied) research. It seems that, with regard to the learning outcomes of the second cycle the student should:

—have a good command of a specialised field within the discipline at an advanced level. This means in practice being acquainted with the newest theories, interpretations, methods and techniques;
—be able to follow critically and interpret the newest development in theory and practice;
—have sufficient competence in the techniques of independent research and be able to interpret the results at an advanced level;
—be able to make an original, albeit limited, contribution within the canons of the discipline, e.g. final thesis;
—show originality and creativity with regard to the handling of the discipline;
—have developed competence at a professional level.

Not all the mentioned learning outcomes or level indicators are of the same relevance for each discipline. Having said that, the *Tuning* members have nevertheless a preference for these descriptors as compared to the descriptors for bachelors and masters presented by the Joint Quality Initiative (JQI) at the conference *Working on the European Dimension of Quality* in March 2002. Besides smaller ones, the main criticism regarding that proposal is that for the second cycle no final project or thesis is included as one of the preconditions for awarding the degree.

It needs to be stressed here that the same learning objectives and competences can be reached by using *different* types of teaching and learning methods, techniques and formats. Examples of these are attending lectures, the performing of specific assignments[1], practising

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[1] I.e. finding out about a specific topic and writing a report or an essay.

technical skills, writing papers of increasing difficulty, reading papers, learning how to give constructive criticism on the work of others, chairing meetings (of seminar groups, for example), working under time pressure, co-producing papers, presenting papers, making précis or summarising, doing laboratory or practical exercises, fieldwork, personal study.

As part of *Tuning* the seven subject areas have held intensive discussions to reach consensus concerning the issue of subject-related competences for their discipline. Each of the groups has written a report with their findings, which is included in part II of this final report of the first phase of the Tuning project.[2] Although the approaches have been very different, due to type of discipline, all groups have followed more or less the same procedure. Four phases of development can be recognised:

In Phase 1 the group members informed each other about the present situation in their institutions, the type of programmes being designed as well as future perspectives. Furthermore, subject area groups studied relevant so-called *benchmark papers* prepared for the British Quality Assurance Agency (QAA) by experts from the British Higher Education world. These papers not only give a description of the bachelor programme of an area but also identify learning outcomes and relevant competences for that area. In addition the groups also tried to map the territory of their discipline. Although, for the first phase of the Tuning project only traditional disciplines were selected, these fields proved less mono-disciplinary than one might expect. In the groups different problems were brought forward. The definitions of a discipline proved to a certain extent to be nationally based. Also the role of related disciplines in the programmes differs from country to country and from institution to institution. Furthermore, for example in the field of History, different student audiences could be identified. Students who take the field as their major and others as their minor or as part of a degree in which History studies have a relevant part.

Phase 2 was characterised by intense discussions and exchange of opinions. These concentrated on the question whether it would be possible to define a «core curriculum». The term itself proved to be very open to discussion, because at present it means, or is taken to mean widely different things in different contexts, not only at country level but also at disciplinary level. All groups tried to identify the differences and analogies in the present systems, as well as in the programmes of

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    [2] Initial reports have been published on the Website of the Tuning project: www.relint.deusto.es/TuningProject/index.htm or www.let.rug.nl/TuningProject/index.htm

study. As part of this phase each of the subject area groups prepared their own questionnaire which contained a series of competences *specific* to the discipline. This questionnaire was completed by academics from the field who were asked to indicate the importance of each of the listed competences for the first cycle as well as the second cycle. Those who answered the questions were also asked whether they thought there were other subject-specific competences not included in the questionnaire. The seven subject areas developed, besides their own list of competences, also their own format. For example, education sciences decided to split the questionnaire into two parts, one focussing on education sciences as an academic discipline and one focussing on teacher education. Geology or Earth Sciences classified their questions under the following headings: a) intellectual competences, b) practical competences, c) communication competences, d) numeracy and C&IT competences, e) interpersonal/ teamwork competences and f) self-management and professional development competences. History, on the other hand, listed «all» 30 major competences and asked to judge the importance of these for three different groups: a) History degree programmes, b) History courses offered to students of other subject areas and c) degrees programmes in which History studies have a relevant part. Chemistry, to conclude, sub-divided their questions under the following headings: a) first cycle - subject knowledge, b) first cycle - Chemistry-related cognitive abilities and competences, c) First cycle - Chemistry-related practical competences, d) First cycle-Transferable competences and e) Second-cycle Chemistry related competences.

In Phase 3 the outcomes of the questionnaire were discussed by each of the groups. The data were compared to other available material and the outcomes of the phases 1 and 2. The discussions were well structured by basing them on draft reports prepared beforehand. The groups identified what was common, diverse and dynamic in their subject areas. They tried to find a common framework for those elements for which it was useful to have clear reference points. At the same time differences were highlighted and it was tested whether these were in fact useful divergences and as such an enrichment.

Finally, in Phase 4, agreements were made and ideas outlined. It was the common feeling at that stage that it was possible to make a big step forward. At the same time the rigidity of the project duration had to be accepted and therefore all groups were eager to present their results in a proper form. They worked very hard up to the last moment (and even longer than that) to be able to present their ideas to a wider public. It should be stressed that all the reports benefited from a cross-fertilisation: from the other subject area groups, the

synergy groups, the plenary sessions, in fact, from the platforms of academics from European Member States which *Tuning* provided.

From the seven —very different— papers the following conclusions can be drawn:

—There is a *great willingness* and *openness* of academics to exchange their views on subject-specific competences and skills within their subject area.

—There is a *significant common line of understanding* of academics about subject related competences and skills within their subject area.

—There is an *identifiable common anxiety* of academics with regard to external pressure to harmonise contents of subject areas.

—There is a *clear orientation from subject input towards learning outcomes* in the design of study-programmes across subject areas, in particular, at higher level.

—There is an *identifiable acceptance of the need of a quality assurance system* to guarantee recognition of academic achievements.

Besides these conclusions, the following can be learned from the papers:

A. A common framework in *first-cycle programmes* is possible and acceptable. In order to develop such a framework it may be necessary to

—identify a *basic common core* which should be included in any programme of that respective subject area (Examples: Mathematics and Business group) *or*

—identify a *common study-degree programme* across several partner institutions in various EU Member States or even in the whole of Europe which may lead to double / joint / common degrees (Examples: Eurobachelor of the Chemistry group, the Physics group welcomes this too, examples also exist in the Business Area) *or*

—identify subject areas which *appear to be different* but are in fact very similar if they are looked at closely (Example: Education group) *or*

—identify a *set of learning outcomes* (Examples: Geology and History groups)

B. A common framework in *second-cycle programmes* appears to be counter-productive (across all Subject Areas). However, this

does not imply that it is not possible to form partnerships, strategic alliances with the objective to develop Joint Master Degrees for example. In fact, these may be wanted by academics, students and/or the labour market. However, it might imply designing individual profiles at an identified level of second-cycle which could be based on 1) widening and deepening vertical knowledge (specialisation of subject area), 2) widening and deepening of horizontal knowledge (additional related subject areas) and/or 3) widening and deepening diverse knowledge (additional unrelated subject areas) to satisfy stakeholder demands and to stress the diversity within Europe (Example: Business Group). Another approach is by *evaluating and accrediting* study-programmes within the European education area which may be based on *benchmarking* (Example: Mathematics Group).

C. Across the cycles it appears that the more the study-degree programme is geared towards a specified profession the more likely an agreement on a common core may be reached, if this is a profession which can be pursued across borders (Example: Education Group).

Tuning has identified three major characteristics of subject areas within the European education area, which are *Commonality*, *Diversity* and *Dynamism*. Commonality in terms of a common core at first cycle can exist. Common core subjects most times cover the basics of a study-degree programme and often include subjects which help to understand the basic subject matters (e.g. mathematics to explain business phenomena). Common core subjects can be taught at any institution —they are interchangeable. *Tuning* has identified such areas. However, this does not mean that common core subjects stay as they are. A permanent update is essential.

With regard to specific subjects the situation is different. They deliver the flavour of a given study-degree programme and thus have to be taught where the specific competences of an institution are. They should be nourished as they highlight the *diversity* which is an advantage within the European education area and not a disadvantage as long as transparency is guaranteed and mutual trust is based on adhering to the quality criteria.

Whereas in the first stages of joint study-programmes e.g. the idea was to harmonise curricula, the premise of *Tuning* was —and this has been confirmed by the outcomes— that it is not wise to look only for common points in every subject area but also to highlight the

differences. On the other hand, it has also become evident that there is no standstill. What is designed today may be obsolete tomorrow. Within the two years of the Tuning project it has become very obvious that a constant update is essential. This *dynamism* can be traced back easily by thumbing through the various working documents of the project.

It has to be concluded that the findings of *Tuning* with regard to the understanding of curricula and the identification of shared descriptors has only been possible through the *discipline approach*. This methodology appears to be crucial for making a clear distinction between the first and the second cycle and describing the contents of the two levels. To understand what this means it may be useful to analyse the various Bachelor-/ Master descriptors / benchmarks which have been published of late as recommendations, discussion papers etc, in particular those by the Quality Assurance Agency, UK; Accreditation Agencies and the Joint Quality Initiative Informal Group.

Within disciplines it is possible to identify structures which can be used to cluster subjects. In addition to subjects which aim at widening the knowledge of the learner, there are others which focus on the deepening of knowledge. This —in very broad terms— is reflected in the two cycles. *Tuning* emphasises a third and vital cluster: knowledge access and transfer. The Lines 1 and 2 of *Tuning* clearly demonstrate this. Subject related competences are to a large extent influenced and determined by generic competences. In Line 1 it has been shown that these competences can be divided into instrumental, interpersonal and systemic. These can serve as a tool to make subject-specific skills and knowledge accessible, which previously were not.

Some examples are given to clarify this. A student of business administration with knowledge in mathematics will be able to express findings in models, not only in words. In this respect mathematics is instrumental and helps to express and understand knowledge differently. It goes without saying that mathematics will not be instrumental in a study programme of mathematics. The same counts for interpersonal competences. With the help of «learning skills», rhetoric, etc. new knowledge will be made accessible which was not at the disposal of the student before. In other words competences and skills which are transferred from one area (discipline, region and/or profession) to another will help a student to express, find, realise new areas of knowledge.

Within a very short period *Tuning* has shown that clear objectives in education can be achieved if an adequate platform is created. Such platforms at European level are a critical success factor to give

academics the opportunity to exchange views, to discuss upcoming issues and to constantly update what is common, diverse and dynamic.

Probably the most important conclusion that can be drawn here is that only by relating knowledge and subject-specific competences to profiles of academic degrees and to those of professions, transparency can be created and coherence identified across Europe. It shows the importance of a project like *Tuning*.

Line 3

New Perspectives on ECTS as a Transfer and Accumulation System

Credits play a major role in the comparability and compatibility of programmes of studies. Therefore, this topic received a lot of attention in the project. Already in the Bologna Declaration its relevance was stressed, so that among others the following is required: «Establishment of a system of credits —such as in the ECTS system— as a proper means of promoting the most widespread student mobility. Credits could also be acquired in non-higher education contexts, including lifelong learning, provided they are recognised by receiving Universities concerned».

Although this statement is not sufficiently specified —it concerns credits for mobility as well as for accumulation— it was a first step. The Prague Communiqué shows the development of thinking: «Ministers emphasised that for greater flexibility in learning and qualification processes the adoption of common cornerstones of qualifications, supported by a credit system such as the ECTS or one that is ECTS-compatible, providing both transferability and accumulation functions, is necessary».

This is the logical outcome of the Salamanca Declaration of the Higher Education sector in which it is said that: «Universities are convinced of the benefits of a credit accumulation and transfer system based on ECTS and on their basic right to decide on the acceptability of credits obtained elsewhere».

In *Tuning* both the macro perspective and the micro perspective has been taken into account. For those reasons two strategy papers were written. The first one focuses on the necessity of setting up a pan-European credit accumulation framework. The second one shows the

relationship between educational structures, learning outcomes, workload and the calculation of ECTS credits. Both papers make it clear that without a reliable workload based credit system, which is understood by all parties in the same way, the objectives of one European higher education area can not be reached.

Tuning is convinced that the only reasonable way forward, is to accept ECTS as the only European credit system and to develop it further both as a transfer and an accumulation system. This requires not only a common understanding of its underlying principles but also a common methodology for measuring workload. Although ECTS is one of the cornerstones in the comparability and compatibility of periods of learning and recognised qualifications, one of the conclusions of *Tuning* is that credits as such are not a sufficient indication of learning achievements. Besides credits, learning outcomes and competences are the other crucial elements. By defining learning outcomes, standards can be set with regard to the required level of discipline-related skills and general academic or transferable skills. ECTS credits are required as the building bricks for underpinning the learning outcomes.

This summary is limited to the conclusions of the strategic papers, which are the result of line 3 and can be found in part II of this report. For the sake of clarity the outcomes have been arranged into four interrelated categories: 1) Educational structures, 2) Learning outcomes and competences, 3) a European Credit Transfer and Accumulation System and 4) workload.

With regard to the issue of *educational structures* the following observations have been made:

—Comparison requires not only comparable systems of higher education on a European level but also comparable structures and content of studies. The definition of learning outcomes / competences and the use of ECTS as a transfer and an accumulation system can accommodate these objectives.
—There is a clear relationship between educational structures, learning outcomes, workload and the calculation of credits in particular within the context of the Bologna Process. These elements are very relevant in the world of today where traditional teaching is partly replaced by new types of teaching and learning.
—The regular teaching and learning periods (including examinations and excluding re-sits) in Europe vary far less between countries than expected.
—Comparability of structures and recognised degrees / qualifications in both a national and an international setting is critical for today's

student. It implies that the student will look for study programmes that fit best to his or her abilities.

—Recognition of degrees between countries will not be stimulated when the differences in length prove to be unbridgeable or incomparable in practice. It is therefore strongly recommended that the length of the first cycle has a student workload of 180 to 240 ECTS-credits and the second cycle a student workload of 90 to 120 (independent of the length of the first cycle)[3].

—With respect to the topic of *learning outcomes and competences* the following conclusions have been drawn:

—Competitiveness requires the definition of learning outcomes / competences to be transparent and requires a credit system which allows comparison. In this respect the ECTS methodology and tools (learning agreement, transcript of records and —in future— level and course descriptors), relevant for both mobile and non-mobile students, are of crucial importance.

—Credits as such are not a sufficient indication of learning achievements. The only reliable way to compare pieces of learning and study programmes offered by (higher) education institutions is to look at learning outcomes / competences.

—The definition of learning outcomes / competences is a responsibility of the teaching staff. Only specialists of the same field will be able to formulate useful learning outcomes, although it is useful to consult other stakeholders in society.

—On the basis of defined learning outcomes / competences credits are an important tool for designing curricula.

—Different pathways can lead to comparable learning outcomes. Therefore, the existing diversity in Europe can be fully maintained.

—Credit accumulation and transfer is facilitated by clearly defined learning outcomes.

—The mentioned strategic papers come to the conclusion that there is an obvious need for *one European credit accumulation and transfer system*, with clear rules:

—One European higher education area requires that Europe agrees on one credit system that should be used for both transfer and accumulation purposes. ECTS is such a system.

—ECTS should be developed into an over-arching pan-European credit accumulation and transfer system.

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[3] The arguments for these recommendations can be found in a separate paper included in part two of this publication.

—ECTS as a Europe-wide accumulation and transfer system is an essential tool for the development of other, more flexible kinds of higher education: part-time studies, recurrent study periods (lifelong learning).
—In order to build a European accumulation and transfer system it is necessary to develop a system of level indicators and course type descriptors.
—When ECTS is accepted on national levels as the official transfer and accumulation system, it follows that credits will loose their relative value and will only have an absolute value.
—60 ECTS credits measure the workload of a typical student during one academic year. The number of hours of student work (that is, of the typical student) required to achieve a given set of learning outcomes (on a given level) depends on student ability, teaching and learning methods, teaching and learning resources, curriculum design. These can differ between universities in a given country and between countries.
—A full calendar year programme (12 months programme of teaching, learning and examinations) can have a maximum load of 75 credits (which equals 46 to 50 weeks).
—Credits allow calculation of the necessary workload and impose a realistic limit on what can actually be put in the whole course or in each academic year.
—Credits are not interchangeable automatically from one context to another.

The major novelty here is the proposal to develop a European-wide system of level indicators, besides a system of course type descriptors as a precondition for the further development of a European credit accumulation system. It is thought useful to give a more detailed explanation here. The information is taken from one of the strategic papers.

While there is no suggestion within ECTS that credits measure level, it is apparent that, when credits are used within an accumulation system, the rules relating to the awarding of a qualification generally specify not only the number of credits required for the specific qualification but also a set of sub-rules in relation to the level at which those credits must be obtained as well as the type of courses.

This project has not endeavoured to tackle this issue, but it is evidently one which all those institutions implementing a credit accumulation system will need to address and which, if credits are to be transferable between institutions and between member states, will need to be

addressed in a European perspective. Currently, such issues are resolved on an ad hoc basis, sometimes utilising the NARIC network, but if larger scale use of a European credit accumulation system is to be successful, there will need to be a European understanding —or even a European-wide system of *level indicators*. A system of *course type descriptors* will be required as well. Moreover, developing these further indications in conjunction with credits will be a critical factor in a system of accrediting prior learning or prior experience so that all concerned will understand, in a transparent way, the level at which the credits are being awarded. Similarly, as the pace of continuing professional development accelerates, the level at which credits are being allocated will need to be made clear.

A possible path forward could be to introduce extra descriptors, which go along with ECTS as an accumulation and transfer system. A pre-condition for such a European wide system is that it should be transparent and easy to understand and to implement. The consequence is that credits will be distributed over levels and type of courses. If we talk about levels we may, as an example, distinguish the following ones:

- **B**asic level course (meant to give an introduction in a subject);
- **I**ntermediate level course (intended to deepen basic knowledge);
- **A**dvanced level course (intended to further strengthening of expertise);
- **S**pecialised level course (meant to build up knowledge and experience in a special field or discipline).

With regard to the type of courses the following ones could possibly be distinguished:

- **C**ore course (part of the core of a programme of studies);
- **R**elated course (supporting course for the core);
- **M**inor course (optional course or subsidiary course).

The levels and types of courses offer us additional crucial descriptors. In order to make clear and immediately evident what learning experience the credits represent one can imagine that a *simple code system* could be introduced. This system would include not only the amount of work done by the student in terms of credits, but also descriptors which give an indication of the level and the type of course unit. To give an example: The code 5-I-R might tell us that the unit has a load of 5 credits, is offered on an intermediate level and is related to the core.[4] For courses taken

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[4] This code system is based on a proposal of the EUPEN network.

outside the framework of a programme, for example in terms of lifelong learning, the last code letter would be superfluous.

One of the issues that has not been solved yet is the calculation of student *workload*. In the framework of the Tuning project the problem has been discussed, and as a result the following main obstacles have been identified:

—Calculation of workload in terms of credits is to a large extent discipline related, and therefore is and has to be determined always by academic staff.
—The notional learning time of a student is influenced by at least the following elements: diversity of traditions, curriculum design and context, coherence of curriculum, teaching and learning methods, methods of assessment and performance, organisation of teaching, ability and diligence of the student and financial support by public or private funds. The notional learning time is the number of hours which it is expected a student (at a particular level) will need, on average, to achieve the specified learning outcomes at that level.

Line 4

Approaches to Teaching and Learning, Assessment and Performance, and Quality

The underlying reasons for undertaking a project such as *Tuning*, and indeed, the strong impulse behind the Bologna-Prague process, is the realisation that the young people of Europe must be culturally and intellectually equipped in new ways in order to construct meaningful satisfying lives, personally and collectively. Quality, in final analysis, means the degree of success of European higher education in creating environments suitable to the creation and transfer of both discipline-specific and generic knowledge and competences to new generations and new kinds of learners.

In our view, institutions of higher education in general, and the Universities in particular, have a key role in developing appropriate strategies to accomplish this and in implementing them. This is not a theoretical judgement. It is a practical fact. The Universities have primary responsibility for using their knowledge, their tradition and their capacity for innovation in order to prepare the future of Europe. Universities, if they use it, have the capacity to act as protagonists in preparing students for a productive working career and for citizenship.

Tuning shows some very interesting things. Universities are experts in transferring disciplinary knowledge. Employers, graduates and academics agree on this. Equally, however, it is clear that the requirements of a mobile, rapidly changing society are such that students, whatever their age, need to develop general capabilities: along with their knowledge. They need to develop personal qualities which will allow them during their lifetimes to learn further, to teach or communicate what they know and to use their knowledge in many ways which we can only dimly imagine today.

If the aims of Universities come to include, as we recommend, the encouragement or the enhancement of qualities which are not subject specific, or even of subject specific qualities which are of use in a more general context of employability and citizenship, they must use the full potentialities of the Bologna-Prague process for promoting quality in teaching/learning, defining appropriate learning outcomes and designing ways to reach them. Hence they must dedicate careful attention to their approaches to teaching and learning.

Universities can «think ahead», they can be projectual, they can prepare the future. If they are to do so on a European scale, appropriate conceptual tools must be developed. When we attempt to map the teaching/learning approaches in use at present in different national systems or individual Universities, it is clear that each has developed a mix of techniques and kinds of learning environments. When these are discussed in international fora, confusion is often created because the same name is given to different methods (e.g. «seminar», «lecture», «tutorial») or, conversely, different names correspond to similar activities. For this reason, to achieve transparency at a European level, a new or an agreed terminology must be developed. If we go behind the words, we find that in each country and in each tradition, universities and their teaching staff have —spontaneously, so to speak— developed a variety of strategies to achieve the desired results. Hence each system has today a degree of inner coherence which cannot simply be discarded, in favour of one or more new «models».

Since traditionally universities have conceived of their task as limited to the elaboration and transfer of disciplinary knowledge, it is not surprising that many academics are not used to considering the issues of teaching/learning methods and are unfamiliar with (or even diffident towards) the vocabulary and the conceptual framework used to describe and classify those methods. The Educational Sciences working group of the Tuning project has prepared a series of materials as a basis for discussion on this topic. Thus they have provided all the discipline-based workgroups with a departure point for considering the relevance of different approaches to teaching/learning in achieving specified learning outcomes, using a common vocabulary. Thus the groups can compare and communicate their findings and their recommendations more generally.

«Tuning» results make clear that Universities must not only transfer consolidated or developing knowledge —their accepted sphere of expertise— but also a variety of «general» abilities. This implies that they must explicitly develop a novel mix of approaches to teaching and learning in order to encourage —or allow to develop— valuable qualities such as capacity for analysis and synthesis, independence of judgement, curiosity, teamwork, and ability to communicate.

Changing teaching and learning approaches and objectives also imply corresponding changes in assessment methods and criteria for evaluating performance. These should consider not only knowledge and contents but also general skills and competences. Each student should experience a variety of approaches and have access to different kinds of learning environments, whatever his/her areas of study may be. Of course, transparency and comparability of assessment methods and criteria for evaluating performance are essential if quality assurance in a European context is to be developed.
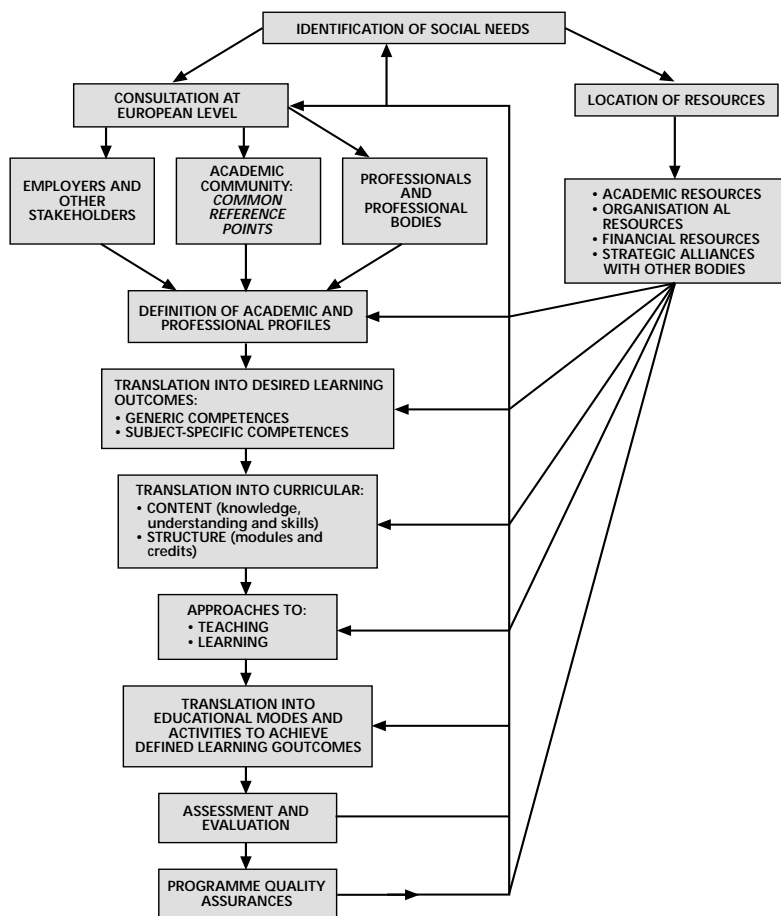
The Tuning Model for European Comparable Degrees

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General Conclusions and Recommendations

Perhaps the most important conclusion is that the creation of a European Area of Higher Education in relation to Educational Structures is possible. *Tuning* shows that convergence fully respecting diversity can be achieved and can lead to further reflection and quality in Higher Education. This project has made it clear that the only reliable way to compare pieces of learning and study programmes offered by (higher) education institutions is to look at learning outcomes and competences. By defining the right learning outcomes, standards can be set with regard to the required level of discipline related theoretical and/or experimental knowledge and content, academic and discipline related skills and generic competences. With the exception of the last one these will differ from discipline to discipline. To make programmes more transparent and comparable on a European level, it is necessary to develop learning outcomes and competences for each recognised qualification. These learning outcomes should be identifiable and assessable in the programme that opts for such a qualification. Learning outcomes should not only be defined on the level of formal qualifications such as degrees but also on the level of modules or courses. The inclusion of learning outcomes in the pieces and the total of a curriculum stimulate its consistency. They make explicit what a student should learn. It is obvious that credit accumulation and transfer is facilitated by clear learning outcomes. These will make it possible to indicate with precision the achievements for which credits are and have been awarded.

The definition of learning outcomes / competences is a responsibility of the teaching staff. Only specialists of the same field will be able to

formulate useful learning outcomes, although, it is useful to consult other stakeholders in society. The fact that the higher education sector has been internationalised and that institutions and disciplines compete on a global level nowadays, makes it necessary that the more general learning outcomes for each discipline or field are designed on a supranational level. By defining learning outcomes in this way universal European reference points are developed, which should be the bases for internal, national and international quality assurance and assessment. One of the major tasks of the project *Tuning Educational Structures in Europe* is the development of the required methodology for defining learning outcomes / competences. This methodology should offer the mechanism to cope with recent developments like the internationalisation of labour and education, the interruption of academic studies as an effect of the introduction of a two-cycle system and lifelong learning.

In the world of today traditional teaching is partly replaced by new types of teaching and learning and traditional higher education institutions experience more and more competition with comparable institutions and with non-traditional institutions which offer novel, attractive opportunities for learners. It is in the interest of society as a whole that learners find their way in a global educational area. Transparency is not only the keyword for that area but also for degree programmes. Quality assurance and accreditation is an integral part of this picture. Competitiveness requires the definition of learning outcomes and competences to be transparent and requires a credit system which allows comparison. In this respect the ECTS methodology and tools (learning agreement, transcript of records and —in future— level and course descriptors), relevant for both mobile and non-mobile students, are of crucial importance. The same is true for the Diploma Supplement. Employability in both a national and an international setting is critical for today's student. It implies that the student will look for study programmes that fit best to his or her abilities. Comparison requires not only comparable systems of higher education on a European level but also comparable structures and content of studies. The definition of learning outcomes and competences and the use of ECTS as a transfer and an accumulation system will accommodate these objectives.

Although a lot has been accomplished in the *Tuning* project already, it is obvious that much work still has to be done. In the first place it is necessary to disseminate the outcomes through different channels of which this final report is one. Secondly, more in-depth studies are still required as well as testing of the present results in other

subject areas. Because of these reasons a *Tuning* project phase II has been developed which is expected to start in the first months of 2003 and will have a running period of two years, as *Tuning* I had.

The first aim of *Tuning* II is to develop further, approaches regarding teaching, learning, assessment and performance and to link-up *Tuning* outcomes with quality assurance and assessment as well as with professional bodies. Furthermore, it is thought necessary that the methodology and results of the lines 1 to 3 are updated and refined. In addition, the outcomes should be made operational for distance learning and lifelong learning.

To conclude this report the following overall conclusions can be drawn regarding phase I of *Tuning*:

— Universities have taken their full responsibility in the Bologna process by initiating the Tuning project.
— *Tuning* shows that groups of academic experts working in a European context can establish reference points for the two cycles in their subject areas.
— Common reference points can be identified using an approach based on subject related and generic competences.
— The application of *Tuning* techniques can be vital for the creation of the European higher education area.
— A process of adjusting to Bologna indications is under way: *Tuning* gives a co-ordinated context for collaboration.

Although conclusions are important, it is more relevant that these are followed-up by concrete action. On the basis of the outcomes of the project, *Tuning* comes to the following recommendations:

— European higher education institutions should agree on a common terminology and develop a set of methodologies for convergence at the disciplinary and interdisciplinary level.
— Competences (both subject-related and generic) should be central when designing educational programmes.
— A framework based on a common understanding of the European credit system should be adopted.
— A common approach to the length of studies within the Bologna two-cycle system is essential.
— The results of *Tuning* should be discussed broadly and if possible elaborated and extended by all stakeholders.