Background information

Introduction

For more than 10 years Higher Education institutions (HEIs) in Europe have been called upon by their Ministers of Education to base their degree programmes on competences and learning outcomes statements on what a student know and can do. Such a development is indeed presented as the backbone of the reform process which should lead to the modernization of Higher Education in Europe and the establishment of a European Higher Education Area. Learning outcomes define (in terms of statements) the subject specific and generic competences levels to be achieved.

At European level, statements exist for bachelor, master and doctoral degrees. They were codified in two European frameworks: the 2005 Framework for Qualifications of the Higher Education Framework of the 48 Bologna Process countries and the, similar and compatible, 2008 European Qualifications Framework (EQF) for lifelong learning of the EU28 (covering basic and intermediate levels as well). These European frameworks provide reference for the formulation of national qualifications frameworks for entire higher education systems.

From 2001 on, HEIs have taken up the challenge to develop frameworks of reference points at disciplinary level and, more recently at domain or sectoral level, in order to offer clear indicators to support their colleagues to make higher education more student-centred and more relevant for life and work. The European TUNING initiatives as well as the Thematic Network Programmes based on subject areas have played a pioneering, stimulating and leading role in this respect.

Although meta-frameworks, national and international, set the standard, giving overall orientation to institutions, academics, students and employers, in practice the most meaningful and useful reference for degree programmes are constituted by subject area or discipline based frameworks. These offer validated indicators of what is expected of a graduate at a designated level in a particular field of studies. They cover a domain of knowledge and the particular skills and wider competences connected to it. The skills and wider competences are both subject area related and generic. The combination of generic and subject-specific competences are recognized today as a crucial outcome of a higher education programme, for personal development, employability and citizenship.

According to this philosophy, individual degree programmes are expected to develop their own set of learning outcomes, and be compatible with the general subject area frameworks as well as the ‘meta-frameworks’. The programme outcomes should reflect the mission of the institution (international, national, regional, local), its orientation (research based, applied or a combination) and its particular profile, taking into account the strengths of the academic staff and the needs of the students.

Role of academics in the Bologna Process

At present a lively international debate is taking place on how to measure learning outcomes and how best to develop these during the teaching and learning process. In particular the generic or general academic skills and wider competences considered to be a challenge. There seems to be agreement within the academic community that an integrated approach that develops not only knowledge, but also skills and wider competences is the most suitable and effective way forward. This implies that the generic competences (transferable skills) should be both formed and assessed in the context of the academic domain in which they are developed.

However, we are forced to conclude that the actual implementation of the competences and learning outcomes based approach at degree programme level, and its underpinning with suitable Teaching, Learning and Assessment (TLA) strategies and methodologies, has had limited success so far in the wider European context. It is in fact accepted that the modernization process of HE-programmes in Europe and therefore the actual establishment of a single European Higher Education Area (EHEA) - notwithstanding the shared architecture -, has made limited progress, after a very promising first phase of six years of developmental activities. Although the architecture seems to be in place in most countries, the actual implementation process and the realization of the expected benefits have been far from smooth and complete. Rather, in many contexts, actual change in learning, teaching and assessment methods and philosophy has met with resistance, whereas the full contribution, cooperation and commitment of the academic community is essential for success. Lack of communication is now thought to be at the root of this problem, insofar as the academics themselves have not been brought into the process effectively.

The learning outcomes approach as a key element of the modernization process of higher education has been introduced, when it has been introduced, top-down by ministerial representatives, civil servants and policy makers, supported by the staff of quality assurance organizations. The consultation and interaction with higher education institutions and in particular with their academics to develop optimal uptake has been limited. The initiatives taken by the academic community to develop frameworks, as mentioned above, seem not to have sufficiently been valued by the authorities responsible for the modernization process. This might be one important reason for the limited success in implementation so far. It cannot be denied, however, that ultimately the desired modernization of higher education programmes will only take place when the new approaches are actually applied in the classroom in the interaction between informed students and prepared teachers. Without doubt modernization requires the right infrastructure, but the contribution of the academics involved to designing (and delivering) the new learning teaching and assessment approaches is crucial. If the academics themselves are not fully convinced that the new paradigm of student-centred learning (which forms the basis for the competence/learning outcomes-based methodology), offers obvious advantages in comparison to the traditional input-based model, the desired changes will not occur. Student satisfaction, but more importantly the successes of individual graduates in society can be useful indicators of improvement.

Hence a central question is how the academic community can be involved so that it can contribute in a more organized and aware way to the modernization process, taking the

initiative and elaborating ways forward instead of waiting for the authorities to take the lead, and resisting suggestions or impositions which may actually be inappropriate. The academic community is a learning community, and is interested in data which show which approaches work best, in order for students to meet academic standards and the more general requirements that society expresses for its most highly educated people.

Feasibility study in three phases

The present project is designed to formulate and test a pilot model based on a three-step approach to developing a multi-dimensional instrument to measure and compare the achieved outcomes in a European context. The tests to be developed are tailored per domain and within a domain per specific subject area/discipline. Each test has to be multi-dimensional to take into account the difference in mission, orientation and profile of degree programmes, related to more theoretical approaches and more applied ones. The charm of a multi-dimensional test is that the scores of students can be valued against several elements. It will allow universities to analyze their students' performance with respect to a series of key elements, and to analyse the results in an international framework: it will be possible to compare student achievement internationally, to see whether a given institution is performing on, below or above average and is meeting (threshold) standards. Furthermore the outcomes will offer important information for quality enhancement and quality assurance. They will also give important indications about whether certain TLA-approaches are more successful than others.

The first step is updating and refining the already quite sophisticated frameworks of reference points based on the work carried out by European Commission-funded pan-European Networks; the second is producing an assessment frameworks based on the first step. These two steps will be completed in the course of the present project and, if the results warrant, the stage has ben set for the third step: creation of multi-dimensional tests.

For the development of the three-step model a bottom-up approach will be applied. This means that for each domain and related subject area/discipline a workgroup of 15 renowned academics with experience in European and international networking will be established, representing 15 different countries and various types of higher education institutions, which together cover a variety of TLA-approaches. In the pilot phase five different academic domains and five related subject areas/disciplines will be covered: Engineering (Civil Engineering), Social Sciences (Education), Humanities (History), Health Care (Nursing) and Natural Sciences (Physics). This means that 75 HEIs will be directly involved.

First phase – Update the frameworks of reference points

As part of the first phase 5 refined frameworks of reference points for the first (bachelor) and the second cycle (master) will be developed. This is required to assure a correct balance of learning outcomes between both cycles. Past experience has shown that this is the only way of defining reliable level descriptors for both levels. The frameworks will be based on a proven format, applied for all Tuning conceptual frameworks so far. They cover such items as typical degrees offered in the domain/ academic field, typical occupations with a first and a second

cycle degree, agreed learning outcomes for the first and second cycle, if feasible both at sector and subject area level; and new approaches required in teaching, learning and assessment for outcome-based learning.

Given the positive experiences regarding the development of frameworks of reference points by the academic Tuning community as well as by Thematic Network Programmes (TNPs) as mentioned above, a good way forward is to utilize and build on the work that was successfully carried out in the period 2001-2010. The frameworks that were produced during those years will be updated and enhanced - in the framework of this initiative - on the basis of current knowledge and experience so that they can continue to serve as reliable references for the outcomes of programmes of study.

Second phase - Produce the assessment frameworks

Based on the outcomes of the first phase, during the second phase of the project an assessment framework per domain/subject area will be developed consisting of a) a clear set of assessment criteria based on the multi-dimensional approach doing justice to different types of institutions and profiles; b) a detailed test blue print for each of the assessments and c) a detailed work plan for the creation and implementation of the assessments. The assessment frameworks for Education, History, Nursing and Physics will be designed for the final stage of the first cycle (bachelor); for Engineering for either the end of the first cycle or the end of the second cycle (master). Both options are open and the decision will be made by the group of experts involved in the project.

Furthermore, a White paper will be prepared that lays out the costs/benefits for various assessment designs. This will allow for making evidence based decisions regarding next steps. Educational Testing Service (ETS) will in particular be involved in this phase of the project. This non-profit organization, which is also involved in the OECD PISA and PIAAC initiatives, has the high-level expertise and staff to implement its part of the project successfully.

It is expected the tests will be machine based to limit costs. This will allow for multiple-choice based testing but also for more sophisticated testing forms.

Third phase – Design the multi-dimensional tests

During this phase the actual multi-dimensional tests will be developed, which should offer reliable information about the strength and weaknesses of degree programmes and the approaches applied, given their profiles. It is intended that these assessments will be field tested in five institutions per country with one institution (represented by their academic expert) in the workgroup and therefore involved in the development of the test. This implies that each test will be taken in 75 higher education institutions and that a total of five times 75 institutions, that is 375, will be covered.

For budgetary reasons, the testing phase will be realized in a follow-up project.

Quality assurance and accreditation

Today, quality assurance and accreditation at programme level require that the learning outcomes of each individual programme be referenced against both meta-profiles and subject-area based profiles. To decide whether a programme is up to standard, the traditional methods of peer reviewing are still applied. Peer review processes are usually nationally based, with only minor exceptions such as those for international joint programmes. In this traditional model, evaluation reports are often felt not to be completely objective, reflecting the personal opinions of the evaluators rather than a shared understanding of what programmes should deliver. Also, the system of programme reviews involves a huge amount of time and money that is often criticised as excessive with respect to the usefulness of its results/outcomes.

In this perspective, it is remarkable that the potential of the competence and learning outcomes approach is not yet used to establish and compare (levels of) outcomes. This is unfortunate, because such an approach is suitable for defining and measuring, - in comparative perspective - the real outcomes of the learning process and thus the effectiveness of the teaching, learning and assessment methodologies applied.

It is expected that the outcomes of the pilot study will offer insight in the effectiveness of the student-centred competences / learning outcomes approach. In any case it will offer reliable information about the performance of individual degree programmes. This information can be used for quality enhancement and assurance purposes. If they work well the domain / subject specific tests might be a reliable and much cheaper alternative for programme evaluation as we know it today. It will also position academics in the centre of the modernization process.

Publication of results

It is intended to make public the outcomes of the first phase - the frameworks of reference points - and of the second phase - the measurement frameworks.

As a result of the tests – not covered by this project - performance information will become available at country level, at subject area level and at the level of HEIs that participate in the test. Although the outcomes of the pilot will be kept confidential, at least during the pilot phase, the students who participate in the test will obtain a certificate with their results. It is up to them to use this certificate in applying for a job, or a follow-up study if they wish to do so.

Organisation

This initiative - involving around 10% of the higher education institutions in Europe in the end – will draw attention again to the Bologna / Europe 2020 initiative to develop one European Higher Education Area.

The feasibility study is co-financed by the European Commission in the framework of ERASMUS+ Key Action 3 Forward Looking Cooperation Projects and the Associations, Organisations and universities involved. Partners in the project are 75 universities, and the

following organisations: European Student Union (ESU), European Association of Institutions in Higher Education (EURASHE), European Consortium for Accreditation in Higher Education (ECA) and the main university networks (Coimbra, Santander, UNICA, Utrecht, Compostela) as well as the European Network for Accreditation of Engineering Education (ENAEE). The five subject areas are jointly coordinated by two universities each. The European Associations and Organisations constitute the Advisory Board, in which also the European University Association (EUA) and the European Association for Quality Assurance in Higher Education (ENQA) participate. The project is run by a Management Board and a Coordinating Team. The management board will consist of the coordinating team, comprising the TUNING staff, with support from ETS, and two representatives per academic domain/subject area as well as a student representative.