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Feasibility study ‘Measuring and Comparing Achievements of Learning Outcomes in Higher Education in Europe’ – Extension (CALOHEX)

An Initiative of the International Tuning Academy (TUNING) and co-financed by the European Commission in the framework of the ERASMUS+ Programme / KA3 Forward Looking Cooperation Programmes

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Aim of the Study

Do students enrolled in higher education around Europe develop the competences they need? Are study programmes delivering their promises? Can we learn to compare student's achievements in different countries in a meaningful way?

The new EU funded project, called CALOHEX, will help to find the answers to these questions by developing the infrastructure that will eventually make it possible to test bachelor and master students' performance Europe-wide across a range of fields in a way that satisfies the needs of the various stakeholders in the European higher education community. The project will cover five subject areas, representing five significant academic fields / subject areas (academic domains):

- *Business Administration* (Social Sciences)
- *Information Engineering/ICT* (Natural Sciences)
- *International Relations* (Humanities/Social Sciences)
- *Medicine* (Health Care) and
- *Performing and Fine Arts* (Humanities/Arts).

The CALOHEX project is a follow-up of the project CALOHEE that was implemented in 2016-2018 for the following academic fields: Civil Engineering (Engineering), Nursing (Health Care), History (Humanities), Physics (Natural Sciences) and Teacher Education (Social Sciences). See for the outcomes: <https://www.calohee.eu>

The project intends to develop Qualifications Reference Frameworks and Assessment Reference Frameworks in the five academic fields mentioned. These will use the same methodology, but they will be tailored to the characteristics of each subject area and domain, taking into account the diversity of missions, orientations and profiles of universities in Europe and their various degree programmes.

These frameworks will facilitate the development of diagnostic tests which will allow university management, academics and students to understand whether students are achieving internationally defined levels of competences which prepare them for their role

in society in terms of personal development, civic, social and cultural engagement (citizenship) and employability, while meeting agreed academic standards. The goal of the project is to develop the infrastructure to compare and measure the effectiveness of degree programmes. This will provide evidenced-based tools to measure success and support universities in their efforts at continuous improvement.

CALOHEX will use a bottom-up approach in order to give the academic community a central position in the further implementation of the process of modernisation of higher education in Europe. It builds on the work already carried out in the framework of the European Higher Education Area (Bologna Process) and the worldwide activities associated with TUNING.

The consortium in charge of the project is led by the International TUNING Academy. In phase 1, it obtained technical support and consultation from non-profit Educational Testing Service (ETS) (based in Princeton, New Jersey, USA). The project involves an impressive array of participants, including prestigious universities, university associations and other organisations active at European, national and grassroots level, such as the student unions. The project is co-financed by the European Commission in the framework of the Erasmus+ programme.

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About TUNING

TUNING is a university-driven process, organised by the International TUNING Academy, which offers a universal approach to reform higher education at the level of higher educational institutions and subject areas. The TUNING approach consists of a methodology to (re-) design, develop, implement and evaluate study programmes for each of the three cycles of higher education. It serves as a platform for developing reference documents at subject area level. This work is based on a wide stakeholder consultation, including employers, graduates, students and academic staff. The reference points – fully respecting diversity and autonomy - are relevant for making programmes of studies comparable, compatible and transparent. TUNING contributes to the development and enhancement of high-quality competitive study programmes by focussing on fitness of purpose (to meet expectations) and fitness for purpose (to meet aims). The methodology transcends "delivery" and encompasses all learners.

TUNING was launched in 2000 as a response of the academic world to the Bologna Process and has developed – with full support of the European Commission - into a global process since (<http://tuningacademy.org>)

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 Qualifications Framework for the Higher Education Area 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 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 (autonomy and responsibility) 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 autonomy and responsibility 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 reference 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 frameworks, and as a follow-up diagnostic assessments to be developed are tailored per domain and within a domain per specific subject area/discipline. Each framework and 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 multi-dimensional frameworks and tests is that the performance of classes 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* of the project is either defining or re-defining the frameworks of reference based on the work carried out by European Commission-funded pan-European Networks. This will be done on the basis of a successful merger of the European Qualifications Framework for Lifelong Learning (EQF for LLL) and the Qualifications Framework for the European Higher Education Area (QF for the EHEA). The CALOHEE Phase 1 has shown us how fruitful this approach is. The *second step* is producing a much more detailed Assessment Reference Framework for each of the Subject Areas which is based on the first step. The *third step* is the matching of existing degree programmes against the internationally agreed reference frameworks. In addition, and as input for the development of the frameworks, an assessment reference framework will be developed for civic, social and cultural engagement. This framework will include five *dimensions*: Societies and Cultures: Interculturalism; Processes of information and communication; Processes of governance and decision making; Ethics, norms, values and professional standards and Sustainable development (climate change).

For the development of the three-step model a bottom-up approach is applied. This means that for each subject area/discipline a workgroup of 14 renowned academics plus one student 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. This means that 70 HEIs will be directly involved. The European Student Union (ESU) is expected to identify five students who are taking a major in the academic fields involved.

First phase – Defining / Re-defining Qualifications Reference Frameworks

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 an enhanced format, which has been applied for the Tuning conceptual frameworks in the past. They cover the following items: typical degrees offered in the domain/ academic field; typical occupations with a first and a second cycle degree; (an

inventory of) typical tasks and responsibilities graduates have in the world of work; agreed outcome based descriptors for the first and second cycle (bachelor and master), and new approaches required in teaching, learning and assessment supporting outcome-based learning, based on identified 'best practices'. Core of this documents are the one page Qualifications Reference Frameworks based on the merger of the EQF for LLL and the QF for the EHEA, which reflect the agreed descriptors. These are organized on the basis of so called 'dimensions' which do justice to the QF for the EHEA. A dimension is a constructive key element which defines a subject area. Each subject area is based on a number of dimensions.

Second phase – Develop Assessment Reference Frameworks

Based on the outcomes of the first phase, during the second phase of the project an Assessment Reference framework for each subject area will be developed consisting of several elements. The first of these is a breakdown of the set of dimensions in sub-dimensions. The second the breakdown of descriptors in sub-descriptors. This breaking down allows for the formulation of measurable learning outcome (statements). As a third element, for each descriptor or set of sub-descriptors best practice TLA approaches are identified.

Third phase – Matching existing degree programmes against the Frameworks

Having the Qualifications Reference Frameworks and related Assessment Reference Frameworks in place allows for comparing existing degree programmes with the agreed framework reference descriptors. Each expert will be invited to execute this exercise in the framework of his / her department / school.

Quality assurance and accreditation

Today, quality assurance and accreditation at programme level (should) require that the (programme) learning outcomes of each individual programme be referenced against both overarching or meta-profiles (EQF for LLL / QF for the EHEA) and subject-area based reference frameworks. However, 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 a reliable instrument to reference existing individual programme against internationally agreed 'standards'. This information can be used for quality enhancement and assurance

purposes. In the long(er) run, comparative assessments based on these frameworks might be a reliable and much cheaper alternative for programme evaluation as we know it today. Both the frameworks and these tests will also position academics (again) in the centre of the modernization process.

Publication of results

Both the five Qualifications Reference Frameworks and the related Assessment Reference Frameworks will be published for general use. The matching of existing programmes and the frameworks at meta level (not individual level) will provide insight in the state of the modernization process of higher education in Europe. It is expected that there will be room for further improvement.

Organisation

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 10 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), Stichting NUFFIC, Education for an Interdependent World (EDIW), The European Alliance for Subject-Specific and Professional Accreditation and Quality Assurance (EASPA), FEANI, and the main university networks (University networks: Coimbra Group, Grupo Santander, UNICA, Utrecht Network, Compostela Group (CGU)). 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), the European Association for Quality Assurance in Higher Education (ENQA), the European Quality Assurance Register for Higher Education (EQAR) as well as the Federal Institute for Vocational Education and Training (BIBB), the European Association for International Education (EAIE) and the European Network for Accreditation of Engineering Education (ENAE) participate. Another 60 universities are involved as participants, as a result of the outcomes of an Open Call.

The project is run by a Management Committee (MC) and a Coordinating Team. The MC consists of the coordinating team, comprising TUNING staff, ten Subject-Area Coordinators (two per Subject Area), as well as a student representative of each of the five Subject Areas.