Workshop 3:
EASPA - Third Global Conference of Professional Accreditation in cooperation with ASPA (American Network for the Specialized and Professional Accreditation)

Measuring and Comparing Achievements of Learning Outcomes in Higher Education in Europe (CALOHEE)

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Overall Coordinator
1. TUNING role and experience
2. Why CALOHEE?
3. Challenges
4. Conditions for success
5. Partnership
6. Structure: A project in three stages
7. Design
8. Intended outcomes
1. Tuning

Mission of Tuning:
Contributing significantly to the Modernization agenda in Higher Education

Main drivers:

♦ Realizing a paradigm shift: from expert-driven teaching and learning to student-centered learning (input to output)

♦ Basing curricula on programme and module/unit learning outcomes

♦ Preparing graduates for employability and citizenship (developing competency) on the basis of a well defined field of study

Main contributions:

♦ Sophisticated methodology to reform Higher Education degree programmes

♦ Frameworks or benchmarks of internationally agreed reference points for sectors and subject areas
A selection of publications

The Tuning Contribution
2. Why CALOHEE?

**Main reason:**

- To obtain / provide reliable information about achievements of learning in (transnational) comparative perspective at
  - Individual level
  - Programme level
  - Institutional level
  - National level
  - International level

  to allow for **degree programme enhancement** focusing on the domain of knowledge taking into account preparation for employment and active citizenship. Offering main stakeholders reliable information for making informed choices.
Project aims

- Develop a **multi-dimensional instrument to measure and compare levels of learning** doing justice to the different missions and profiles of HE institutions.

- Develop **transnational conceptual frameworks and assessment frameworks** for five academic domains and five related disciplines (Civil Engineering, Nursing, History, Education and Physics).

- Develop **test blue prints, work plans for creation and implementation of assessments** plus white paper explaining costs/benefits of various designs for transnational comparative assessment.
3. Challenges

- Covering all five main academic sectors: Health Care, Social Sciences, Natural Sciences, Engineering and Humanities
- Involvement of Higher Education institutions (management level); academics (degree programme level); students (subject area level)
- 80 to 90% coverage of testing group (students)
- Reliable assessment approach: intelligent methodology covering knowledge, understanding, skills (subject related and generic/general)
- Cost-effective assessment model
- Applying assessment grids taking profiling and missions of institutions and degree programmes into account
- Offering added value to students, academics and their higher educational institutions: certificates for students, content and management information for academics and university leaders
4. Conditions for success

- **Consistent Higher Education cultural environment** (building on 30 years of EU Erasmus Programmes + 15 years of Bologna Process)
- **Full commitment** of Higher Education institutions and in particular their academics
- **Full involvement of students**
- **Support from key international and national organizations**: European networks / associations / organizations of universities
- **Building on proven experience** (15 years of TUNING worldwide)
- **High level expertise**: disciplinary level and testing modeling (ETS)
- **(Technical) support of re-known experts** in the field of transnational assessment
- **Aligning with comparable national initiatives**: Germany, USA, Australia
Success requires a well-defined partnership:

- 75 universities; 15 per domain/subject area covering 14-15 countries each
- European Student Union (ESU)
- European Association of Institutions in Higher Education (EURASHE)
- European Consortium for Accreditation in Higher Education (ECA)
- European Network for Accreditation of Engineering Education (ENAAEE)
- University networks: Coimbra, Santander, UNICA, Utrecht, Compostela

Other members in the advisory board: European University Association (EUA), the European Association for Quality Assurance in Higher Education (ENQA), European Association for International Education (EAIE), U-Multirank, Academic Cooperation Association (ACA) and ENIC-NARIC

The project is run by a Management Board and a Coordinating Team, supported by Educational Testing Service (ETS), Princeton (USA)
6. Structure: three phases

Phases 1+2 clearly to be distinguished from phase 3

First phase – *Update the frameworks of reference points*

- Development of 5 refined conceptual frameworks of reference points for first (bachelor) and second cycle (master) at sectoral and subject area / disciplinary level (based on Tuning model): cycle descriptors / typical occupations / overview of TLA-approaches

Second phase - *Produce the assessment frameworks*

- Development of an assessment framework per domain/subject area consisting of:
  - Clear set of assessment criteria based on the multi-dimensional approach doing justice to different types of institutions and profiles;
  - Detailed test blue print for each of the assessments and
  - Detailed work plan for the creation and implementation of the assessments. Education, History, Nursing and Physics for the final stage of the first cycle (bachelor); Engineering either end first cycle or end second cycle (master).

- Preparation of White paper which will lay out the costs/benefits for various assessment designs for making evidence based decisions regarding next steps. Involvement of Educational Testing Service (ETS)

Third phase – *Design the multi-dimensional tests + Testing (next phase project)*

- Development of multi-dimensional tests based on agreed dimensions and parameters
- Assessment of students of 5 subject areas in 5 x 75 higher education institutions
7. Design

Building on work established and lessons learned:

- **Regional approach**: initial focus on Europe / EHEA only
- **Trans(national) and Sectoral Qualifications frameworks /TUNING model for Conceptual frameworks /Available experience regarding comparative (trans)national assessments**
- **Integrated approach** of subject specific and generic competence development (general competences tested in relation to disciplinary ones)
- **Multi-dimensional approach** to do justice to different missions and profiles of Higher Education institutions and degree programs (research based / applied based) based on *shared* body of knowledge and skills
- **Use of dimensions + parameters** – all related to subject area: Parameters: 1) theoretical knowledge and skills; 2) application of knowledge and skills; 3) preparation for employability and 4) active citizenship ; Dimensions differ per sector
- **Five subject areas / disciplines** representing the five main academic sectors
- **The assessments / tests** will take place at the **final stage of the first cycle / bachelor**

Progression routing: Sectoral conceptual framework – Subject area based conceptual framework – Detailed Assessment framework – Actual multidimensional test – Testing of students
7. Design

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Progression routing: Sectoral conceptual framework – Subject area based conceptual framework – Detailed Assessment framework – Actual multidimensional test – Testing of students
1. **Why Europe only?**

Contextual dimensions are a reality: social-economic and cultural factors play a role in the way (higher) education is perceived and organized.

**University studies have different:**

**Lengths:** bachelor 3-5 years – master 1-3 years

**Orientations:** Broad range globally from liberal arts models (broad general education) to specialized education; experts driven teaching to student centered learning

**The world-wide Tuning experience shows us:**

Differences – larger and smaller – between subject area based conceptual frameworks / meta-profiles between continents / regions / countries in particular regarding the selection of generic competences to be developed and trained.

**Therefore:**

To avoid unnecessary complications possibly undermining the assessments reliability the focus is on one region only. However, application in other regions based on tailored materials is foreseen.

**Warning:** Do not compare apples and pears!
2. Why base CALOHEE on Qualifications Frameworks?

Offer agreed indicators of:
- Level
- Content
- Direction

EQF Descriptors

TUNING Sectoral Reference Points

TUNING Subject Specific Frameworks: Reference Points

Tuning Sector / Subject Area Based Assessment Frameworks

Profiles of individual degree programmes
Design (4): Role of Tuning Sectoral Qualifications Frameworks

Subject areas / disciplines: mono-, multi-, interdisciplinary

EQF

Humanities and the Arts

Social Sciences

Engineering

Health Care

Natural Sciences
3. **WHY choose for an integrated approach of generic and subject specific competences?**

The Tuning experience shows:

- Generic competences are developed as part of the body of knowledge and skills of a subject area (integrated approach)

- Only a limited number of generic competences can be developed / trained, which requires choices

- The core set of generic competences partly differs per sector / subject area

- Application of generic competences differs between sectors / subject areas: e.g. analyzing and synthesizing, teamwork, communication skills, entrepreneurship, etc.
4. WHY four parameters and why these?

The feasibility study distinguishes parameters – categories - to be assessed: 1) theoretical knowledge and skills; 2) application of knowledge and skills; 3) preparation for employability and 4) active citizenship.

Do justice to:

- missions and profiles of the Higher Education institutions: international, national, regional orientation and player or a combination of these (compare U-multi-rank approach)
- the missions of the Higher Education institutions: ranging from research intensive to applied
- degree programmes ranging from broad (basis in sector) towards very specialized (in particular at bachelor / first cycle level)
- minors and electives, differing per degree programme (and related to its profile / set of programme learning outcomes)
- developing high level knowledge and understanding and its applications of a subject besides allowing for personal development and preparing for citizenship and being employable

Four identified parameters should offer a fair way of comparing 1) what is / should be learned for the world of today and tomorrow; 2) achievements of comparable institutions / programmes (in accordance with approach used by Multi-rank)
### 5. WHY applying Subject specific dimensions?

- Does justice to the character of specific academic domain
- Structures sets of learning outcomes in a logical way
- Allows for combining QF for LLL and QF for the EHEA

<table>
<thead>
<tr>
<th>Humanities Dimensions</th>
<th>Creative and Performing Disciplines dimensions</th>
<th>Engineering dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Human Being</td>
<td>Making, Performing, Designing, Conceptualising</td>
<td>Knowledge and Understanding</td>
</tr>
<tr>
<td>Cultures and Societies</td>
<td>Re-thinking, Considering and interpreting the Human</td>
<td>Engineering Analysis</td>
</tr>
<tr>
<td>Texts and Contexts</td>
<td>Experimenting, innovating &amp; Researching</td>
<td>Engineering Design</td>
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<tr>
<td>Theories and Concepts</td>
<td>Theories, Histories and Cultures</td>
<td>Investigations</td>
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<tr>
<td>Interdisciplinarity</td>
<td>Technical, environmental and Contextual issues</td>
<td>Engineering Practice</td>
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<td>Communication</td>
<td>Communication, Collaboration &amp; Interdisciplinarity</td>
<td>Communication and Teamwork</td>
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<td>Initiative and Creativity</td>
<td>Initiative &amp; Enterprise</td>
<td>Making Judgements</td>
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<tr>
<td>Professional Development</td>
<td></td>
<td>Lifelong Learning</td>
</tr>
<tr>
<td>QF EHEA 2nd cycle descriptors I, III-V</td>
<td>SQF Humanities dimensions Level 7 (MASTER)</td>
<td>EQF descriptor Knowledge Level 7 highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research - critical awareness of knowledge issues in a field and at the interface between different fields</td>
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<tr>
<td>Special feature degree programme I hav demonstrated knowledge and understanding ....</td>
<td>a. The Human Being</td>
<td></td>
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<td></td>
<td>b. Cultures and Societies</td>
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<td></td>
<td>c. Texts and Contexts</td>
<td></td>
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<tr>
<td>III. have the ability to integrate knowledge and handle complexity, and formulate judgements</td>
<td>d. Theories and Concepts</td>
<td></td>
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<td></td>
<td>e. Initiative and Creativity</td>
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<td></td>
<td>f. Interdisciplinarity</td>
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<tr>
<td>IV. can communicate ....</td>
<td>g. Communication</td>
<td></td>
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<tr>
<td>V. have the learning skills ....</td>
<td>h. Professional Development</td>
<td></td>
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</tbody>
</table>
MULTI-DIMENSIONAL APPROACH

Assessment frameworks based on parameters/dimensions

PARAMETERS / CATEGORIES

<table>
<thead>
<tr>
<th>EQF: Knowledge</th>
<th>Skills</th>
<th>Competences</th>
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</thead>
<tbody>
<tr>
<td>Theory and research skills</td>
<td>Application knowledge and skills</td>
<td>Employability</td>
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Common body of knowledge, skills and wider competences

Assessment framework
MULTI-DIMENSIONAL APPROACH

Assessment frameworks based on four parameters: subject specific dimensions:

- Common body of knowledge, skills and wider competences
- Employability
- Active Citizenship
- Theory and research skills
- Application knowledge and skills

Example of a research university (based on profile and mission)
Example of a university of applied sciences (based on profile and mission)
Shared body of knowledge, skills and wider competences
7. Intended outcomes phases 1 +2

3 main expected achievements:

- Complementing European Qualifications Frameworks at domain and disciplinary level by conceptual and assessment frameworks

- Rekindle the fire of the student-centred/competences/learning outcomes approach (by focussing on quality and relevance of learning according to four dimensions)

- Frameworks which are a reliable basis/condition for setting-up fair transnational assessments
Detailed outcomes of first project phase (2016-2017):

- Conceptual frameworks for five academic sectors
- Conceptual frameworks for: Nursing, Physics, Civil Engineering, Education, History
- Detailed assessment frameworks (criteria) for mentioned Subject Areas based on multi-dimensional approach
- Matrix model to distinguish between different institutions
- Detailed test blueprint for each of the assessments
- Detailed work plan for the creation and implementation of the assessments
- White paper explaining costs/benefits for various assessment designs; allowing for evidence-based decisions regarding actual comparative assessment phase
What do the (assessment) frameworks offer the individual student / department and academic staff?

Insight in:
- internationally agreed reference points (benchmarks) regarding their field of studies
- detail in terms of knowledge, skills and (wider) competences to be learned according to the specific profile of the HE institution and degree programme
- what might be expected from their educational programme, to be prepared well for:
  - operating as an expert in the chosen discipline
  - working successfully in a related employability field (jobs and tasks expected to perform)
  - acting as an active citizen (taking responsibilities and civic awareness)
What do the (assessment) frameworks offer the management and leadership of an institution?

**Insight in:**
- whether the learning outcomes of its programme(s) are aligned with internationally agreed standards
- whether the learning outcomes meet the mission and profile of the institution / its programmes
- strengths and weaknesses of its programme(s) according to the four identified parameters and the agreed dimensions
- possible needs for quality enhancement of (aspects of) its programmes (in comparative perspective)
- whether its programmes are able to compete with comparable programmes in an (inter)national context
What do the assessment frameworks offer for quality assurance / accreditation?

At international level:
✓ More detailed and relevant sets of international reference points aligned with meta-qualifications frameworks: EQF for LLL / QF for EHEA, at sectoral and subject area level

At national level:
✓ More precise international benchmarks which allow for referencing degree programmes in (inter)national quality assurance and accreditation procedures by doing justice to their mission and profile
✓ Potentially a means for simplifying quality assurance and accreditation systems (‘proof is in the eating of the pudding’)
Intended outcomes phase 3 (1)

Personalised assessment results

**CERTIFICATE**

Name of student
Date of birth
Home university + enrolment identification number
Date assessment taken

**Reading guide**

Description of the assessment and its aim, explaining its outline and structure (four categories) and guidelines for interpretation of score cards.

**Student will obtain a certificate which contains:**

- his/her individual scores (xx/100)
- overall average scores all participants (xx/100)
- average scores of peer group of student (based on comparison of mission/profile) (xx/100)
- Score cards distinguishing four identified categories
- Explanation and purpose of the assessment
- Explanation of the structure of the test: four categories + comparison to peer group of student
Intended outcomes phase 3 (2)

Group results (allows for aggregation at different levels)

Department / staff will obtain insight into:

- Performance of its individual students (xx/100)
- Performance of its cohort compared to overall average scores all participants (xx/100)
- Performance of its cohort compared to average scores of peer group of student (based on comparison of mission/profile) (xx/100)
- Score cards distinguishing four identified categories
- Identification of strengths and weaknesses of own programme and students (taking into account own profile and mission)

Score cards

Knowledge and skills discipline
- Item 1
- Item 2
- Item 3

Ability to apply disciplinary knowledge and skills in practical situations
- Item 1
- Item 2
- Item 3

Preparation for employability
- Item 1
- Item 2
- Item 3

Preparation for citizenship
- Item 1
- Item 2
- Item 3

Name of student