Tempus

QANTUS Seminar

"European dimension of designing of study-programmes"

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Topics of the presentation

a) Necessity of a new approach for designing SPs after Bologna

b) Tuning approach to the design of study programmes

a) Necessity of a new approach for designing SPs after Bologna

The **Bologna process**, the main aim of which is the **harmonization of the systems of tertiary education** at European level, through the **comparability** of the SPs, …

… which requires the sharing of an **organisation in cycles of the educational systems**,

and

the sharing of the **educational objectives** and the **assurance of their achievement** …

… makes it necessary to revise all existing SPs which are not based on the concept of cycles and implies a drastic change in the design of SPs.

Input-based versus output-based programmes

The ‘old’ degree programmes were designed on the basis of tradition and the resources already available.

They can be considered as ‘**input-based**’ or ‘**teacher/staff oriented/centred**’.

In such programmes the **emphasis is placed on the individual interests of academic staff** or on the existing organisation of studies.

Furthermore the teacher-oriented approach is generally time-independent, based on the assumption that **the proper object of study is what the individual professor thinks the student should learn in his/her course unit**.

At present HEIs are undergoing a transformation process. The traditional approach is slowly giving way to an '**output-based**', '**student-oriented/centred**' **approach**, **which takes the student as the centre of the teaching and learning process**.

The aim of a student-centred programme is **to make students as competent as is feasible in a given timeframe for their future role in society**.

In these programmes **the focus is no more on what a student has been taught, but on what a student has learned and is able to do**, that is **on competence development and the achievement of intended learning outcomes** of the learning process.

A model for the designing student-centred degree programmes was developed in the context of the

Tuning project.

*'**Tuning**' is a university driven initiative, which was originally set up to offer a concrete approach to implement the European Bologna process at the level of Higher Education Institutions (HEIs) and subject areas.*

*The name **Tuning** (in the dictionary, among the possible meaning of 'tuning', there are those of 'bringing into harmony', 'adjusting for effective functioning') was chosen to reflect the idea that **universities do not look for uniformity in their degree programmes but simply for points of reference, convergence and common understanding**.*

According to the Tuning approach, **programmes leading to a bachelor or master degree are no longer to be described and planned solely according to their content, but mainly according to a *degree profile*, the *competences* expected in the graduates at the end of the educational process and the *learning outcomes* to be achieved by students during the educational process.**

Degree profile

Description of the character of a study programme or qualification.

This description gives the main features of the study programme which are based on the specific aims of the programme, how it fits into the academic map of disciplines or thematic studies and how it relates to the professional world.

Competence

According to ISO 9000 norm, "**ability to apply knowledge and skills to achieve intended results**".

According to Tuning project, 'competence' represents a **dynamic combination of knowledge, understanding, skills** *(that is learned capacities, according to the Tuning glossary)* **and abilities** *(acquired or natural capacities)*.

The competences should correspond to the competences necessary to carry out the role expected for the graduates in the labour market.

Fostering competences is the objective of all educational programmes. The level to which competences are obtained is expressed in a mark or grade.

Learning Outcome

Statement of what a learner is expected to know, understand and/or be able to demonstrate after completion of a process of learning.

Learning outcomes must be such as to enable students to acquire the established competences. Therefore, the programme learning outcomes should align with the programme competences, not necessarily on a one to one basis, but overall.

Tuning makes the *distinction between competences and learning outcomes* to distinguish the different roles of the most relevant players: students/learners and academic staff.

Competences are developed and obtained during the process of learning by the student/learner.

On the other hand, **desired learning outcomes of the learning process are formulated by the academic staff**, even if preferably with the involvement of student representatives in the process, on the basis of input of internal and external stakeholders.

b) Tuning approach to the design of study programmes

Over time, Tuning has developed into an **approach to (re-) design** (and to develop, implement and evaluate) **SPs for each of the Bologna cycles** - bachelor, master and, more recently, doctorate -, which nowadays can be considered valid worldwide, since it has been tested and found fruitful in several continents.

The **main steps** of the Tuning approach can be summarised as follows.

1. **Meeting of the basic conditions**, articulated in:

- identification of the stakeholders' needs / demonstration of the programme need;
- availability of the necessary resources.

2. <u>Definition of the degree profile, including programme competences and programme learning outcomes</u>, articulated in:

- definition of the degree profile;
- identification and definition of the programme competences to be developed;
- definition of the programme learning outcomes to be met.

3. <u>Definition of the degree programme</u>,
articulated in:

- definition of the course units (modules and other educational units) or of the *curriculum*;
- definition of the course unit characteristics [specific learning outcomes, content (topics to be covered), approaches to teaching and learning as well as assessment methods].

Degree programme: a complete programme of study leading to a degree or an approved set of didactic units recognized for the award of a specific degree.

Curriculum: an approved set of course units.

1. Meeting the basic conditions

Deciding **to institute a degree profile** should normally be the **outcome of a process of analysing the needs of society combined with those of the specific subject** area as well as the **personnel, infrastructural and financial means** which can be made available to establish the study programme.

Identification of the stakeholders' needs

The **social need for the programme** must be demonstrated through a broad consultation. The consultation should not only include the academic community, but also employers, professional bodies and other stakeholders.

The consultation process should also **identify the educational needs of the stakeholders**, in terms of competences required of the future programme graduates.

Availability of the necessary resources

The availability of adequate resources is a pre-condition for delivering a programme. Resources include both academic staff and facilities.

The **teaching staff** in charge of the course units should be quantitatively and qualitatively adequate to favour the achievement of the intended programme learning outcomes by the students.

The **facilities** (in particular: classrooms, rooms for individual studies, laboratories, libraries) should be quantitatively and qualitatively adequate to the development of the didactic activities according to what designed and planned and to actuate the established didactic methods.

2. Definition of the degree profile, including programme competences and programme learning outcomes

The formulation of degree profiles, the definition of key programme competences and the writing of good programme learning outcomes are the object of the **Tuning Guide to *Formulating Degree Programme Profiles, Including Programme Competences and Programme Learning Outcomes***, available on the Tuning web site (http://www.unideusto.org/tuningeu/images/stories/documents/Tuning_Guide._Degree_programme_profiles.pdf).

Definition of the degree profile

In an output-based SP the main emphasis lies on the degree or qualification profile.

The degree profile must clearly:

- define the aims and purposes of the programme,
- describe, in terms of competences and learning outcomes, what graduates will know, understand and be able to do by the time they have successfully completed the programme, spell out what can be expected of the graduates in terms of the kinds of tasks they are equipped to undertake, their level of expertise and the responsibilities they can assume.

Identification and definition of the programme competences to be developed

Subject-specific and generic competences

Competences can be distinguished in ***subject-specific*** (that is specific to a field of study) and ***generic*** (common to any degree programme) competences.

Tuning has initially identified the ***subject-specific competences*** for nine subject areas:
Business Administration, Chemistry, Education Sciences, European Studies, History, Geology (Earth Sciences), Mathematics, Nursing and Physics,
and then for many other subject areas (http://www.unideusto.org/tuningeu/subject-areas.html).

Of course the documents which shown the identified subject-specific competences should be understood to be working documents, subject to further elaboration and change.

With regard to ***generic competences***, Tuning distinguishes three types of generic competences:

- ***instrumental competences***: cognitive abilities, methodological abilities, technological abilities and linguistic abilities;
- ***interpersonal competences***: individual abilities like social skills (social interaction and co-operation);
- ***systemic competences***: abilities and skills concerning whole systems (combination of understanding, sensibility and knowledge; prior acquisition of instrumental and interpersonal competences required).

An up-to-date list of generic competences as developed in the Tuning process is available in the **Tuning Guide to *Formulating Degree Programme Profiles, Including Programme Competences and Programme Learning Outcomes***.

The competences to be established should be a selection of the 'specific' and 'generic' competences that will have to be acquired by the time the programme is completed.

To select the key competences, single out the main competences of the programme that, listed together, provide a good insight into the character of the programme to a relatively uninformed reader.

A minimum of 8 and a maximum of 15 key competences are suggested by Tuning.

With regard to the ***subject specific competences***, if the programme subject area is one of those for which the key subject-specific competences have been identified, use them as reference framework (http://www.unideusto.org/tuningeu/competences/specific.html).

With regard to the ***generic competences***, use the standard list of generic competences developed by Tuning (http://www.unideusto.org/tuningeu/competences/generic.html).

Do not copy it: rather, use it as a starting point to write a more detailed competence statement tailored to the programme.

At this regard it is suggested to:

- begin with a short definition or the name of the competence (e.g.: Research, Communication, Interpersonal, Teamwork, Ethics) followed by a colon ':' (e.g.: Communication:);
- add to this short definition a qualifying/informative statement. (e.g.: Communication: ability to communicate effectively with a range of people from different backgrounds).

Example

Tuning lists '***ability to work in a team***' as a generic competence.

This description is very general and does not show what the student is able to demonstrate. Therefore, it is necessary to give more detail and context to the competence so that the reader can understand exactly what the competence entails.

An example of a competence statement might be: ***capacity for working in a team and for assuming responsibility for certain tasks***.

The example meet the requirement that the description of the competence should be as short as possible, while at the same time providing enough context and detail as to give the reader some insight into what the student is able to do.

Definition of the programme learning outcomes to be met

PLOs should be aligned with, and informed by, relevant international and national frameworks at both the specific subject level and the general educational level .

When they are available, it is - in addition - strongly advised to consult subject specific frameworks, such as the relevant Tuning subject area reference frameworks and/or national conceptual frameworks of subject related descriptors.

A minimum of 15 and a maximum of 20 key programme learning outcomes are suggested by Tuning.

The following are characteristics of good, verifiable, comprehensible and observable PLOs. They should be:

- **specific** (giving sufficient detail, written in clear language);
- **objective** (formulated in a neutral way, avoiding opinions and ambiguities);
- **achievable** (feasible in the given timeframe and with the resources available);
- **useful** (they should be perceived as relevant for higher education studies and civil society);
- **relevant** (should contribute to the aim of the qualification involved);
- **standard-setting** (indicate the standard to be achieved).

Level of learning outcomes

The **level of the learning outcomes has to be adequate to the reference cycle (I or II) of the study programme.**

From the European perspective, an important step in constructing the EHEA has been the development of an agreed set of **general descriptors** (that is generic statements of the broad expected outcomes) to outline the essential components of any degree programme that leads to the completion of a Bologna cycle.

These are known as the **Dublin Descriptors** and are based on the following inter-related dimensions**:**

- **acquiring knowledge and understanding;**
- **applying knowledge and understanding;**
- **making informed judgments and choices;**
- **communicating knowledge and understanding;**
- **capacities to continue learning.**

The Dublin Descriptors have been endorsed by the European Ministers of Education as part of the report *A Framework for Qualifications of The European Higher Education Area* (http://www.bdp.it/lucabas/lookmyweb/templates/up_files///Processo_Bologna/Doc%20Qualification%20Framework.pdf)

Besides the QF for EHEA, the European Union has established also a **European Qualifications Framework for Lifelong Learning (EQF for LLL), which has eight levels, covering learning achievements at all educational levels** (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF).

As far as higher education is concerned, the top 3 levels (that is 6, 7 and 8) in this framework are compatible with the three cycles included in the Qualifications Framework for the EHEA.

The Dublin Descriptors/EQF descriptors form general reference points at the European level in which any specific SP has to be situated.

Of course programme learning outcomes defined according to Tuning approach have to be consistent with the corresponding Dublin descriptors and EQF descriptors.

Language of the learning outcomes

The language used to describe the learning outcomes is of crucial importance.
While there are a variety of different ways of outlining a learning outcome, each one normally should contain ***five key components*:**

1. **An indication of the *type* of PLO: knowledge, cognitive processes, skills, or other competences.**

The PLO should clearly reflect the **type of learning** to be achieved: this means making it explicit whether the PLO is about acquiring knowledge, developing understanding and cognitive processing, learning a mechanical skill, a professional stance or the like.

The language should also indicate whether the PLO is predominantly focused on one or more of the types of learning.

2. An active *verb* form.

At this regard different taxonomies or classification systems have been developed to explain how people learn and what features distinguish the beginner from the expert.

The taxonomies have specific verbs and expressions associated with their classification system. While these systems can be helpful in writing PLO statements, each of these taxonomies has its strengths and shortcomings.

Each has been developed in a particular timeframe and for a particular purpose and might not always be applicable to present day learning.

3. **The *subject* or *topic area* of the learning**: this can be specific or general and refers to the subject matter, a field of knowledge, a professional activity, an ability to perform or a particular skill.

4. **An indication of the *standard* or the *level* that is intended / achieved by the PLO**. This needs to reflect the breadth, depth and complexity of the learning as well as the relevant qualification descriptor.

5. **The *scope* and/or *context* of the PLO.**

Example

To illustrate the above, we analyse here one example from the field of Physics:

'**Ability to make measurements of physical quantities and to pursue an investigation by the design, execution and analysis of experiments, to compare results with existing knowledge and theories, and to draw conclusions (including degree of uncertainty)**'.

Type	Verb	Subject or Topic area	Standard or Level	Scope and/or Context
Ability	to make measurement	physical quantities		
	to pursue	investigation	by design, execution and analysis of experiments	to compare results with existing knowledge and theories, and to draw conclusions (including degree of uncertainty)

3. Definition of the degree programme

The formulation of a degree programme requires:

- the **definition of the curriculum with its course units** (modules and other educational activities);
- the **definition of the course-unit characteristics** (specific learning outcomes, content, etc.).

Definition of the curriculum with its course units

Generally the information required by programme evaluation/accreditation agencies operating at European level are:

- the ***curriculum***, with the list of the course units, their sequence (year and semester of delivery), the number of ECTS credits associated at each unit and the unit lecturer (see the following table).

Year/ Semester	Course Unit	ECTS Credits	Lecturer/s
…	…	…	…

The main Tuning comments to the definition of the SP curriculum may be summarised as follows:

- curriculum should be **coherent** with the degree profile and, in particular, with the intended learning outcomes;
- curriculum should **not overload** students with excessive and redundant content;
- curriculum should be **organized** in a consistent and efficient way by using workload-based credits.

European Credit Transfer and Accumulation System (ECTS)

According to the Tuning approach, an important role in the definition of the curriculum should be played by the **European Credit Transfer and Accumulation System (ECTS).**

As a matter of fact, **ECTS credits today are increasingly used as a tool for designing curricula**. Because they express student workload measured in time, they allow HEIs to plan the most effective way to achieve desired results within the time constraints of the length of their degree programmes.

In other words, **ECTS permits us to plan how best to use students' time to achieve the aims of the educational process**, rather than considering teachers' time as a constraint and students' time as basically limitless.

Definition of the course unit characteristics

For each course unit a SP should define at least:

- **name**;
- **number of ECTS credits**;
- **lecturer/s**;
- **learning outcomes specific** of the didactic unit and consistent with the established learning outcomes of the SP;
- **contents and schedule**;

- **typologies of the educational activities** (e.g.: theoretical lessons, practical lessons, laboratories, projects, etc.), also in terms of number of hours/credits for each typology, and relative **instructional forms of education** (e.g.: face to face education, distance education, etc), also in terms of hours/credits for each form;

- **assessment methods** (e.g.: written examinations, oral examinations, etc.) and **criteria** (descriptions of what the learner is expected to do and to what level, in order to demonstrate that a learning outcome has been achieved and to what extent); **criteria for measuring students' learning** (e.g.: attribution of a final grade, fitness declaration, etc.) and **criteria of attribution of the final grade**, if any;

- **preparatory didactic units**, if any;
- **didactic material of reference** (e.g.: textbooks, lecture texts, etc.).

The **assessment methods and criteria should provide evidence of their capacity to check the effective achievement of the intended learning outcomes** by the students and ensure trust that the level of achievement by the students is assessed in a credible way.

As for the assessment of the students' learning, European wide **guidelines** have been established in the ESG.
They establish that:

"Student assessment procedures are expected to:

- be designed to measure the achievement of the intended learning outcomes and other programme objectives;
- be appropriate for their purpose, whether diagnostic, formative or summative;
- have clear and published criteria for marking;
- be undertaken by people who understand the role of assessment in the progression of students towards the achievement of the knowledge and skills associated with their intended qualification;
- where possible, not rely on the judgements of single examiners."

The definition of the characteristics of the course units should be coordinated by the SP, particularly in order to avoid gaps or superimpositions in the definition of the specific learning outcomes and contents and to assure the suitability of the assessment methods to a correct assessment of the students' learning.

The SP should define how to manage the coordination activity.

Once the characteristics of the course units have been defined, at least two checks are necessary

- **One regards whether the key generic and subject specific POs are covered**, that means: to check progression paths of the key generic and subject specific POs identified; to check whether all programme key generic and subject specific POs are covered by the course units.

To this aim one of the two following tables can be used.

Programme learning outcomes	Course units which contribute to the accomplishment of the learning outcome
…	…

Course Unit	Programme Learning Outcomes									
	A	B	C	D	E	F	G	H	I	J
Unit 1		X			X				X	
Unit 2	X			X		X	X		X	
Unit 3		X			X				X	
Unit 4	X		X							X
…										

- **The other regards the curriculum balance and feasibility,** that means:
  - to check whether the completed programme is balanced in terms of the effort it requires and the POs to be achieved;
  - to check whether the credits have been allocated on sound principles and that the students can complete the individual units and the whole programme within the allotted time.

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Thanks for your attention!

Спасибо за ваше внимание!