

## **Production of digest of TUNING projects and methodology (Explaining TUNING)**

### **1. Background**

As all AQUA-TNET members know, the Bologna reforms and the establishment of the European Higher Education Area (EHEA) (and the TUNING initiative) came about as described below. The Lisbon European Council (2000) set a new strategic goal for the EU: to become 'the most competitive and dynamic knowledge-based society capable of sustained economic growth'. To achieve this, Europe's education and training systems needed to be transformed and, where possible harmonised. In 2000 the structures of education systems were very different, both within and between countries. The impetus from the Bologna Declaration (1999) calling for the establishment by 2010 of a coherent, compatible and competitive European Higher Education Area, did gain favour and thus momentum. According to the latest Trends V report (2007), based on a survey of more than 900 universities, its ten action lines are steadily being implemented. These action lines are:

1. Adoption of a system of easily readable and comparable degrees
2. Adoption of a system essentially based on two cycles
3. Establishment of a system of credits
4. Promotion of mobility
5. Promotion of European cooperation in quality assurance
6. Promotion of the European dimension in higher education
7. Lifelong learning
8. Higher education institutions and students
9. Promoting the attractiveness of the European Higher Education Area

### **2. TUNING Educational Structures in Europe**

In order to facilitate the aims of the AQUA-TNET project to submit an Aquaculture template in order to become a TUNING member, a TUNING representative was invited to meet the AQUA-TNET network at its Annual Event in Crete in June 2007. The presentation made at that time is available inline as part of the Event's online presentations.

#### Timeline

Launched in 2000 by the EUA and supported by the EU, TUNING is a universities' driven project which offers a universal approach to implement the Bologna process at the level of higher education institutions and subject areas. The Tuning approach consists of a methodology to design, develop implement and evaluate study programmes for each of the Bologna cycles.

Tuning serves as a platform for developing reference points at subject area level, in order to make programmes of studies comparable and compatible, reference points which are expressed in terms of

learning outcomes and competences. 'Learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after the completion of a learning experience by the learner'. Competences represent a dynamic combination of knowledge and understanding, intellectual and practical skills, as well as generic and meta-cognitive competences which also include inter-personal skills and ethical values. Competences are developed in all course units and assessed at different stages and by different assessment instruments in the programme of studies. In the Tuning approach and methodology, competences are either generic (common to any course) or subject-area related (specific to a field of study).

AQUATNET's previous work included the development of a set of generic competences which are remarkably similar to those developed by TUNING 1. (Annex 1)

AquaTT has also developed a set of vocational competences for aquaculture, using an industry-based approach, which have the potential for transfer to the Bologna first cycle, within the AQUA-TNET network of universities and institutions (WP3 Deliverable 3.5).

### **3. Competency Approach**

The description of curricula in terms of knowledge, skills, competences and learning outcomes was recommended in ministerial statements at Bologna and Copenhagen Process conferences in Prague (2002), Copenhagen (2002), Berlin (2003), Maastricht (2004), Bergen (2005) and Helsinki (2006). The competency approach thus plays a significant role in the recognition of learning outcomes and credit transfer (ECVET), in the recognition of prior and non-formal learning in lifelong learning, and in the development of national and international qualification frameworks can only be awarded when learning outcomes are met. Competences are important in that they signal a more student-centred approach to learning. They also lead to growing transparency in study programmes, and thus to a better communication with employers. In TUNING 1, the initiative carried out a detailed survey which was able to distinguish between generic competences and subject-specific competences. A list of 30 generic competences was drawn up in consultation with graduates, employers and academics and was remarkably similar to the list drawn up by AQUATNET several years previously. The subject specific competences related to knowledge, understanding and skills, and led to each of the (then) five subject areas mapping their subject areas and developing a set of common reference points.

One cause for concern at the moment concerns the definition of the term. At the Conference for the launch of the European Qualifications Framework in Brussels (June 2008), it was specifically stated that there are two separate definitions of competences, and it is not yet clear which is going to prevail.

### **4. Learning Outcomes**

The use of the learning outcomes approach points to a change in emphasis from teacher-centred curricular design/programmes of studies to a student-oriented approach. This also has implications for teaching, learning and assessment methodologies. TUNING has identified best practices for using both generic and specific subject-related competences at all stages of the learning process.

Learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate at the end of a period of learning. They are explicit assertions about the outcomes of learning - the results of learning. Learning outcomes are concerned with the achievements of the learner rather than the intentions of the teacher (expressed in the aims of a module or course). They can take many forms and can be broad or narrow in nature. They are usually defined in terms of a mixture of knowledge, skills, abilities, attitudes and understanding that an individual will attain as a result of his or her successful engagement in a particular set of higher education experiences. In reality, they represent much more than this. They exemplify a particular methodological approach for the expression and description of the curriculum (modules, units and qualifications) and level, cycle and qualifications descriptors associated with the Bologna reforms. It is interesting to note however that Learning outcomes were not mentioned in the original 1999 Bologna Declaration or in the Prague Communiqué 2001. Since then they have appeared in every new ministerial Communiqué, culminating in the most recent London (2007) pronouncement where no less than four separate references were made. They have gradually assumed greater importance as the practicalities of implementing radical educational reforms across Europe were encountered.

**Learning outcomes are acknowledged as one the basic building blocks of European higher education reform.**

#### **5. Credits**

According to the TUNING approach, credits can only be awarded when learning outcomes are met. At present these are ECTS credits, but could include ECVET credits once this vocational credit-based system is in operation – and since many of the aquatic sciences subject areas include practical skills and competences, this could be important for AQUA-TNET in future. The subject of ECTS credits however is the concern of another WP3 deliverable.

## ANNEX 1

- \*1. Capacity for analysis and synthesis
  - \*Capacity to learn
  - \*Problem solving
- \*2. Capacity for applying knowledge in practice
- 3. Capacity to adapt to new situation
  - Concern for quality
- \*4. Information management skills
  - Ability to work autonomously
- \*5. Teamwork
- \*6. Capacity for organisation and planning
  - \*Oral and written communication in native language
  - \*Interpersonal skills
  - Will to succeed
- \*7. Capacity for generating new ideas
- \*8. Elementary computer skills
- \*9. Decision-making
- \*10. Critical and self-critical abilities
- \*11. Ability to work in inter-disciplinary team
  - \*Initiative
- \*12. Basic general knowledge
  - \*Grounding in basic knowledge of profession
  - Ability to communicate with experts
- 13. Ethical commitment
- 14. Knowledge of 2<sup>nd</sup> language
  - \*Project design and management
- \*15. Research skills
  - \*Leadership
- \*16. Ability to work in international context
- 17. Appreciation of diversity/multiculturalism
- 18. Understanding of other cultures.
  - Discussion group skills
  - Simulation models
  - Case studies
  - Presentation skills

**TUNING Common Subject-specific competences are few and very general**

- Identify a common core
- Identify a common study programme
- Identify subject areas which seem to be different but are similar
- Identify a common set of learning outcomes
  
- To have knowledge of the biology of farmed animals (finfish, shellfish, etc)
- To know how to apply this knowledge in animal production
- To be capable of
  - characterising
  - analysing
  - evaluating different forms and systems of animal production
- To indicate and prevent side effects of animal production on man & environment
- To acquire a scientific attitude, oriented towards
  - formulation of hypotheses
  - testing of hypotheses
  - designing of research protocols
  - collection of data
  - analysis of data in different fields
- To value strategic and operational issues in the field of aquaculture sciences
- To search for solutions through a multi-disciplinary approach
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