

Atlanta EU/US Research and Education Workshop

Key messages

Session II

Innovative curricula for global R&D

Topic B: Building non-technical skills into innovative curricula

US Michael ADEWUMI

- 1) The engineers of tomorrow must be trained to think 3-dimensionally
 - a. Technical dimension
 - b. Human dimension
 - c. Environmental dimension
- 2) In order to produce 3-dimensional graduates, universities must create interdisciplinary programs with a global perspective
 - a. Master's of Professional Studies in Sustainable Georesource Management (SGRM) is an example of such a program
- 3) Partnership between varied disciplines and varied institutions around the world produces both better engineers and more competent global citizens

EU Alexandre QUINTANILHA

Non-technical skills are a misnomer. All skills have a technical and a non-technical component. It has never been only what you know, but also the manner in which you use that knowledge, that is important. Memory is less relevant than competence. The new curricula should emphasize the development of skills that enhance one's curiosity and the ability to integrate ideas from different domains of knowledge. Convincing others that you are the right person for the job, or that you have an idea that is worth exploring, requires a combination of tools that are cultural and social. The right mix of individual versus group effort is often critical for the success of any novel idea. Curricula that do not address this challenge will remain non-stimulating.

Topic C: Shaping, implementing and assessing innovative curricula for global R&D careers

EU Dieter LEONHARD

The key to sustainable exchange in graduate (and undergraduate) education are integrated joined programs with significant periods in the partner country, implying internship and/or research training in industry and in research facilities. Intercultural preparation is mandatory and must include – besides information about everyday life and social aspects – intensive involvement with the diversity of scientific cultures and methods as well as with the R&D- orientated questions of the respective societies or ethics.

R&D-orientated curricula should be completed by technology transfer, patent protection and entrepreneurial aspects to foster start-ups.

The number of diplomas issued (joint/double degree) is a secondary aspect here.

Of fundamental relevance – but still open – is the status question. Do we consider the young researchers as Ph.D. students or as employees? Not to forget the still too many administrative difficulties occurring as far as doctoral student mobility is concerned.