Promoting the Interaction between Education, Research and Professional Practice

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International Trends in Surveying Education...

- Management Skills - versus specialist skills
  - from traditional technical skills and push button technologies
  - to interpretation and management of data meeting the needs of the clients
- Project Organised Education - versus subject based
  - from traditional technical skills (knowing how)
  - add-on approach
  - to management and problem solving skills (knowing why)
  - focus on "learning to learn"

...International Trends in Surveying Education

- Virtual Academy - versus classroom lecture courses
  - from traditional on-campus activities
  - to a more open role of serving the profession and the society
- Lifelong Learning - versus vocational training
  - from learning for life through university graduation
  - to lifelong learning through CPD-strategies and distance learning

The Global Challenges

- Technology development
  - GPS, GIS, Internet
- Micro-economic reform
  - privatization, decentralization, downsizing, quality assurance
- Globalization
  - from local to global
  - events in one part of the world impact on people in other parts of the world
- Sustainable development
  - developments that effectively incorporates economic, social and environmental concerns in decision-making
  - meet the needs of the present without compromising the ability of future generations to meet their own needs

Education, Research and Professional Practice

Wonderful Prague
**Problem Solving and Applied Science**

- Practical solution
- Theoretical explanation
- Method
- Theoretical problem
- Practical problem
- Impressions, assumptions and theories

**Project-organised and Problem-based Learning**

- Literature
- Lectures
- Internet
- PROBLEM ANALYSIS
- PROBLEM SOLVING
- REPORT
- Tutorials
- Field Work
- Experiments

**Key Philosophy**

Tell me and I will forget
Show me and I will remember
Involve me and I will understand
Step back and I will act

*Chinese proverb*

**The Aalborg Curriculum**

- Final Thesis
- Internship: International Exchange - project work at AAU
- Measurement Science
- Special/Information Management
- Land Management
- Graduate Management
- Land Surveying
- Large Scale Mapping
- Spatial Planning and Land Use Management
- Basic Studies
- Basic Studies

**The Aalborg Model**

- Problem Based Learning
  - Based on real-life engineering problems
- Project Organised Education
  - Project work supported by lecture courses
- Group Work
  - groups of four to six students
  - supervised by the teachers
- Interdisciplinary Studies
  - Integration of theory and practice
  - Focus on Learning to Learn

**Lecture Courses and Project Work**

- Project work: a major assignment within a given subject-related framework determined for each semester.
- Project related courses supporting the project work:
  - Evaluated as oral examinations based on the project report.
- Mandatory courses relating to the overall academic profile of the curriculum:
  - Evaluated through individual written or oral examinations.

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Study Regulations

Describe for each semester

1. Aims and objective of the theme
2. The knowledge and understanding to be possessed by the students completing the semester
3. The focus and possible contents of the project work
4. The aim of lecture courses supporting the project work
5. The aim of lecture courses supporting the curriculum

This will form the basis for the examination by the end of the semester

Examination

- Based on the project report
- Conducted as a group seminar
- Chaired by the supervisor
- One third of the program is examined by external examiners
- Presentation from each student (one hour in total)
- Questions/discussion (about three hours)
- Assessing methodological and professional understanding
- Individual marking of each student

The Role of the Teacher

- A three-dimensional role:
  Lecturer (teacher), Supervisor (coach), Researcher (scientist)
- Focus on learning rather than teaching
- On-going renewal of lecture courses
- On-going and dynamic interaction between education, research and professional practice

The Surveyors Profile

Yesterday, Today and Tomorrow
Evolution of the Surveying Profession in DK

Evolution of the Professional Profile in DK

The Educational Profile of the Future

- Structural Changes
  - Local level: Department and university
  - National level: Performance criteria, resources
  - International level: Agreements such as Bologna
  - Call for leadership, focus on the professional competence of the graduates

- Quality Assurance
  - Internal monitoring
  - Quality management - Handbook of Quality Control
  - Quality Circle

- Accreditation, monitoring and assessment
  - Evaluation towards minimum standard criteria
  - Monitoring of the labor market for the graduates
  - Establishing an Advisory Board

The Managerial Challenge

- Evaluation of each lecture course
- On-going evaluation of the semester
- Final evaluation of the semester
- Evaluation done by the students
- Assessed by the board of studies
- Improvements through preparation of the next year semester next

Without assessment of the completed semester - the students cannot expect to commence on a well-planned and improved semester

The Quality Circle

The Professional Challenge

Professional competence relates to the status as an expert.
This status cannot be achieved only through university graduation and it cannot be achieved solely through professional practice.

The idea of “learning for life” is replaced by the concept of lifelong learning.

E-Learning and innovative interaction between education, research and professional practice is essential in this regard
Enhancing Professional Competence

Curriculum development is a dynamic and ongoing process
The only constant is change
The educational base must be flexible
Educational, managerial and professional challenges should develop ways and means to face these challenges.

Key Message

Curriculum innovation essentially depends on an efficient interaction between education, research, and professional practice.

Final remarks

Key Message

Curriculum innovation essentially depends on an efficient interaction between education, research, and professional practice.

Thank you for your attention