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)
  - 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

Scenic Nepal – Dhuklikhel
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 Aalborg University
- Measurement Science
- Specialization in 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

*“The Aalborg Experience”, Finn Kjærnsdam & Stig Enemark*
Lecture Courses and Project Work

- **50%** project work: a major assignment within a given subject-related framework determined for each semester.
- **25%** project-related courses supporting the project work. Evaluated as oral examinations based on the project report.
- **25%** mandatory courses relating to the overall academic profile of the curriculum. Evaluated through individual written or oral examinations.

The Surveyors Profile

**Yesterday, Today and Tomorrow**

- **From Measurement**
  Surveyors will still be high level experts within measurement science, but due to technology development the role is changing into managing the measurements.
- **To Management**
  Surveyors will increasingly contribute to building sustainable societies as experts in managing land and properties.

The Land Professionals

- Technology
- Engineer
- Law
- Lawyer
- Planning
- Architect

Real Property

- Measurement
- Science
- Spatial
- Information
- Management
- Land
- Management

Surveyor

- Engineering
- Surveys
- Cadastral
- Work
- Spatial
- Planning

Evolution of the Surveying Profession in DK
Evolution of the Professional Profile in DK

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. All graduates must have access to the newest knowledge throughout their professional life.

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

Key Message

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

Thank you for your attention