A BLENDED EDUCATIONAL TRAINING IN SURVEYING AND CADASTRE

Ana-Cornelia BADEA, Assoc. Prof. PhD.Eng.
Gheorghe BADEA, Prof. PhD. Eng.
Technical University of Civil Engineering Bucharest,
Faculty of Geodesy, BUCHAREST, ROMANIA

FIG WORKING WEEK 2015
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FIG Context - promoting new methods of education

- FIG distributes information on the topic of e-learning to the surveying community;
- FIG brings experts together to share their knowledge on the topic of e-learning;
- FIG promotes creating of e-learning networks, increasing cooperation on the topic of e-learning with other organisations in the field of geosciences;
- FIG encourages their members to develop and share e-learning contents within surveying education.
Why a new approach in teaching?

• quickly flowing of information
• newest emerging technologies

Blended Learning?

• classes where a part of the traditional face-to-face instruction is replaced by web-based online learning
Our Project – University Network Approach

- in the sustainability period
- 4 Universities & IT Company

four regions of Romania:
- Bucharest-Ilfiov
- West
- North-East
- Center

Levels of implementation in the sustainability period

- **BSc** → Specializations:
  - Land Surveying and Cadastre
  - Cadastre and Property Management
  - Geodesy and Geoinformatics

- **MSc** → Specializations:
  - Spatial Planning and GIS for Sustainable Development
  - Geomatics
  - Informational Systems in Cadastre and Real Estate Registration
Main phases

- Modernization of the curricula in the field of geodesy;
- Development of courses with digital animation;
- Development of the e-learning project;
- Creating the infrastructure project;
- Loading courses on the e-learning platform;
- Training teachers and students in activities related to the platform;
- Development of collaborative activities between students from partner universities.
**Workflow**

- The project experts - teachers from the four universities involved - had been trained in how to develop a curriculum complying the quality directives of “The Romanian Agency for Quality Assurance in Higher Education”

- Had been established the courses and their structure - that had been partially implemented in an e-learning platform as core subjects for all the university partners

- ICT partner worked with us to develop an appropriate product and provided the AeL platform

**AeL platform capabilities**

- Teaching and learning;
- Testing and evaluation;
- Management and monitoring of the entire educational process;
- Management of the digital content
Main Courses
- Examples

- Surveying,
- Cadastre,
- Basics of Engineering Surveying,
- Basics on Waves Geodetic Surveying,
- Monitoring of Land and Buildings Deformations,
- Cadastral Information Systems,
- Geometrical Representations of Topographical Surfaces,
- Special Topographic Surveys,
- Topographical Drawing,
- Surveying Instruments and Methods,
- Infographics for Land Surveying,
- Design and Optimization of Geodetic Networks,
- Measurements Processing and Statistics

A Good Blended Learning means INTERACTION:

- Student – to – Student Interaction
- Student – to – Teacher Interaction
- Student – to – Community Interaction
- Student – to – Material Interaction
- Student – to – Technology Interaction

(Source: http://www.teachthought.com)
e-Learning activities in each applicative module

- **introductive videos** – to capture the attention of students, outlining key aims and the learning outcomes;
- **animations** – short Flash movies made to understand better the phenomena and issues of the domain;
- **synchronous and asynchronous courses** – where the students can interact with their colleagues and teachers;
- **glossaries and FAQs** – essential terminologies and definitions with FAQs explaining common problematical areas;
- **chat rooms** – where can be discussed and solved problem with colleagues;
- **self assessments** – tests and themes to help assessing the gained knowledge.

Synchronous / Asynchronous Courses?

- in the synchronous learning teachers have the full control of the educational process, creating, adjusting and monitoring the training environment;
- in the asynchronous learning students can study at their own space and can collaborate in projects. After completing the courses they are tested and evaluated.
Student Centered Approach

Our Approach

(Source: aviewofeducation.wordpress.com)
Thematic Interactive Map: Utility Network

Longitudinal Profile for Sewerage Network
Interactive Activities

course topic

Testing Area
Reports based on topic filter (Surveying courses)

Reports based on teacher name filter
The Main Issues Identified

- students can access information materials during the examination;
- high costs for university studies showing that the preparation of an online course is more expensive than the traditional one (but the costs are then amortized quickly),
- the team of “building” of a course includes people specialized in web design, instructional design - more human resources than the classical method of teaching;
- limited involvement of teachers with conservative conceptions or unwilling to digitally transmit some information they teach in the classroom classically;
- longer time affected to the design of courses and questionnaires.

Blended Learning – Our Advantages

- **Human Interaction**
  - personalized
  - practical training
  - motivation
  - young teachers more involved
  - a sense of belonging to a specific community
  - improve community knowledge sharing between students who use the platform

- **Technology**
  - self study
  - quick answers at homeworks
Thank you for your kind attention!

badeacadastru@yahoo.com
badeacadastru@gmail.com