


eduGI - Reuse and sharing e-Learning materials in GI Science education

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TS 4E – e-Learning and Knowledge Management
Strategic Integration of Surveying Services
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What is e-Learning?

...shift from traditional education to IT-supported flexible, individual, self-organized, collaborative learning based on a community of learners, teachers, facilitators, experts etc.

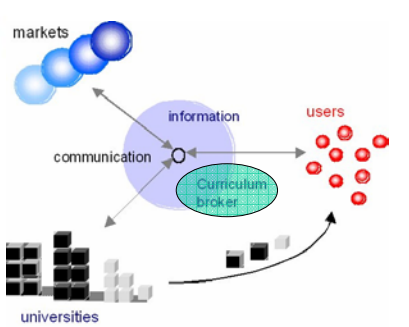
e-Learning develops skills needed in knowledge-based societies

Blended learning is an integrated approach that applies a mixture of e-Learning and traditional education.

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Global market



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- **EU eLearning programme**
 - Virtual campuses

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Aim

Many universities have digital materials available in their knowledge pools. Some of them already have introduced e-Learning.


The project general aim is to (re)use existing resources on the field of GI Science by the exchange of e-Learning courses via the internet.

Duration: 18 m
Budget: 250 k€

Source: <http://www.edugl.net/eduGI>

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Objectives

The project improves

- quality of teaching materials
- access to international GI know-how and new topics that the receiving institutes could not offer to their students by own resources
- virtual mobility of teachers and students across seven European countries
- re-use of resources already invested in eLearning (personnel and finances) by a good practice organizational model for sustainable and future-oriented exploitation
- implementation of the Bologna process by international cooperation of European GI institutes, based on the existing networks

Source: <http://www.edugl.net/eduGI>

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eduGI partners

edugi

Reuse and sharing of e-Learning Courses in IS Science Education

Each partner provides a course, typically to two partners of the network with 15 students each. Standards are : English language, 90 hours workload, 13 online contact lessons, supervision and exams executed by the providing GI institute.

EC e-Learning Programme

Project's reference: e-Learning - Application 04 2011

Workshop: "Is e-Learning right for my organization?" Apr 27-28, 2007
Institute for Geoinformatics, University of Münster, Germany

Source: <http://www.edugi.net/edugi>

edugi | Reuse and sharing of e-Learning Courses in IS Science Education

GEO | FIG | eduGI | ifgi | ifgi

Glossary of critical terms

- module, course, components**
Module: teaching materials in the context of one topic, provided by one partner
component: sub-parts of the modules
course: set of components, belonging to 1 or several modules -> several different sets are possible, choosing the "right" components and learning parts is chosen by the course selector
- test, exam, evaluation, self-test, exercise**
self-test: online questions (e.g., multiple choice), where students may test their know-how. Correct answers will be provided. Self-tests are not graded.
test: Online questions, graded exercises: applying theoretical knowledge, not graded project: students' homework (e.g., report, implementation) to be provided to the teacher by email, graded exam: consisting of tests and/or projects
evaluation: evaluation of teaching materials/courses by teachers/providers and trainees/students. NOT: exam
- learning paths: course selector vs. Dokens**
individual sequence of components in individual courses as a result of the course selector. NOT: sequency of components within a module.
- ECTS credit point:**
It is the European standard for measuring students workloads. However, the numbers are different in the countries, e.g., 1 ECTS credit point means 30 h in Germany, 28 h in Portugal, 27 h in Sweden and 25 h in Spain. The GI indeed consortium agreed on 1 ECTS credit point = 28 h. (or 25-30 h).

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Courses

- Project management (UNI MÜNSTER)
- GI standards (UNIBW MÜNCHEN)
- Advanced Geospatial data mining (ISEGI-UNL)
- Data acquisition and integration (UWH GEO)
- Visualization (ITC)
- Geographic data bases (HAROKOPIO UNI)
- Virtual excursions in Earth Sciences (UPPSALA UNI)
- Data quality (TU VIENNA)

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Target groups

- Teachers/trainers (higher education)
- Students
- Adult learners
- Political decision-makers/administrative staff
- Education authorities
- Curriculum development specialists
- e-Learning industry
- The research community
- Institutes for Geographic Information
- Managers of non-GI institutes targeting the introduction of e-Learning.

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Syllabus

A good syllabus template is a key factor for the success of any e-Learning course (see http://edugi.uni-muenster.de/edugi/downloads/08/Syllabus_UWH_data_acq_integration.pdf)

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Topics of the syllabus (1)

- Contacts**
the full name, photo, e-mail and other contact data here we distinguished the teacher and tutor positions.
- Goals**
introduction to the main topics, methods and principles of the course delivery.
- Contents**
list of the modules with explanation about the characteristics of the material. It is a good practice, if we try to group the modules into parts/units by the logic of whether they have more theoretical, practical or analyzing topics.

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Topics of the syllabus (2)

- Methods**
the key issues necessary for the successful completion of the course. Typically here are mentioned the methods of communication and exam, the expected workload etc.
- Participants**
what are the pre-requirements for the students, and what is the primary target group.
- Organization**
the time schedule, indicating the duration, the date of the synchronous sessions, the date of the final exam. Also the planned number of participants.
- Successful participation**
clear regulations for the successful completion of the course. Here listed the tasks with the deadlines.
- Course preparation**
All the steps which are necessary for starting the course. Typically it means that we organized a test synchronous session and provide (upload) the teaching material to the e-Learning platform, or as an option we can provide some off-line materials (books).
- Literature**
the required and recommended literature.

Content preparation

- Translation to other language (e.g. Hungarian-English).
- Conversion of plain texts into Power Point presentations.
- Development of small applications for carrying out the practical tasks through Internet.
- For self assessment we need to work out tasks, assignments. We need to consider the amount of time planned for the given module, otherwise the students will not be able to complete each task.
- We need to plan synchronous sessions and for this we have to prepare special interactive aids (e.g. video, interactive software usage tutorial etc.)

Tools

- Communication with the students (e-mail, voice-mail, announcements)
- Discussion board
- Tools for synchronous sessions
- In the course delivery: tools for handling of different file formats like html, ppt, pdf, doc, mp3, etc.
- The assessment facilities like test manager, upload of tasks.
- Course calendar
- Gradebook, course statistics

EDUCA Data Acquisition and Integration - Tervező Jelenlegi			
Content Areas	Assignments	User Management	
Pathways	External Links	List L Module Users	Remove Users from Course
Course Documents		Search Course Users	Manage Groups
		Enroll User	
Course Tools	Grading Manager	Assessment	
Announcements	Messages	Test Manager	Gradebook
Course Calendar	Content Collections	Survey Manager	Gradebook Views
Staff Information	Course Profiles	Pool Manager	Performance Dashboard
Tools	Check Collections Links	Course Statistics	
Send Email	Copy Files to Collection		
Discussion Board	View Assessments	Help	
Collaboration	My/Our/His/Her/Its/She/Assignments	Support	Contact System Administrator
Global Dashboard		Manual	Quick Tutorial

Synchronous sessions

- The synchronous sessions are important part of each e-Learning course.
- The preparation for a session needs a lot of time from the tutor. Not only because of the students can ask any aspect from the material, but the session should remain in the main stream of the material.
- Students usually want to concentrate on the assignment issues.

Structure and content

- The content of a course is organized in modules.
- A complete course in the platform can integrate the following items: explanatory text; main text; exercises; data; questions for self evaluation; project description; final exam, other materials including images and video, and a students' discussion forum.
- For each module there are three on-line synchronous sessions where students can interact with tutors and have access to demonstrations, summaries and web links. Students have also access to chat within the platform as well as to forum for the program

The screenshot shows a sidebar with navigation icons and a main content area titled 'Course Documents'. The documents listed are: 'Course Documents', 'Part 1. Introduction', 'Part 2. GIS in Data Integration', and 'Second session'. There are also icons for 'First Session' and 'LMS Overview'.

Example

The screenshot shows a detailed view of a course document titled 'Module number: 4. Remote Sensing'. It includes a list of 'Prerequisites' (e.g., 'Basic GIS', 'Remote Sensing'), a 'Description' of the module, and a 'Learning Objectives' section. The text describes the module's focus on remote sensing techniques and data analysis.

Business model

- an architecture for the product, service and information flows, including a description of the various business actors and their roles,
- a description of the potential benefits for the various business actors, and
- a description of the sources of revenues.

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An good business plan

- Presents the business idea
- Presents the core ideas of services to be offered
- Identifies the innovation and value configuration
- Describes possible entrepreneurs
- Designs a marketing concept
- Designs an organizational framework
- Conceptualizes the realization
- Estimates a budget
- Evaluates risks and opportunities.

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Business model

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- The consortium agrees on an exchange of e-learning courses on a non-fee basis.
- Each partner provides a single e-learning course, in return getting access to free courses from the partnership.
- Partners choose a course topic in which they have special expertise, which reduces development time and increases quality.
- Each course is based on an existing course and available teaching materials.
- Partners deliver a complete course including tutoring.
- The consortium uses an existing e-learning platform of one of the partners.

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Gateway functions

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Standards

- The use of Open-Source software is rapidly growing. This can make a vital contribution to the improvement of technologies to support learning and knowledge-development.
- When open-source combined with open software standards, it becomes even more powerful.

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Metadata

Educational materials - Meta Data – AREA2NE 2000	
1. GENERAL INFORMATION	
1.1 Identifier:	PRONET GEODMAN
1.2 Title:	Geoinformatics for managers
1.3 Author:	Bela Markus
1.4 Published:	1998
1.5 Last Modified:	January 1999
1.6 Language:	Hungarian / English
1.7 Publisher:	CSLM
1.8 Sources:	Bela Markus: Introduction to GIS, NCGIA adaptation, CSLM, 1994, p. 224. Cawter, S.: Introduction to Integrating Geo-Information Management, Chapman & Hall, 1993, p. 252. Obermayer, M. J. – Pato, J. K.: Managing Geographic Information Systems, The Guilford Press, 1994, p. 226.
2. CONCEPTS	
2.1 Subjects:	GIS, management
2.2 Keywords:	Geoinformatics, GIS, spatial information, GIS project, information strategy
2.3 Learning Objectives:	After reading this learning material the learner will be able <ul style="list-style-type: none"> to present it concisely why is the geoinformatics important to analyse the advantages of the use of the GIS to give information about, how and for what purpose the GIS can be used to sum up and apply the fundamental principle of the building up a system to present the principles, problems of establishing a data base to forward proposal for practical solutions to compare the more wide-spread GIS software.
2.4 Content:	Chapters: <ol style="list-style-type: none"> Why to use it? What can it be used for? How does it work? GIS and information society? GIS project Conclusions GIS in action

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Example continued

3. PEDAGOGICAL	
3.1 Learning level:	Introductory
3.2 Prerequisites:	No
3.3 Resource type:	Web
3.4 Relations:	Introductory course for GIS/Management, Web/learning for Geomatics
3.5 Format:	HTML
3.6 Length:	9 hours learning time
3.7 Use rights:	Password protected
4. TECHNICAL	
4.1 Contact details:	Department of Geoinformatics, The University of West Hungary, College of Surveying and Land Management H-8002 Sárszentlőrinc P.O.Box 52. Phone: +36 22 348 273 Fax: +36 22 327 697
4.2 Format:	Word, HTML
4.3 Size of File:	14,8 MB
4.4 Op. system:	Windows 95, 9x, NT
4.5 Use:	
4.6 Rights:	Copyright, Bela Markus 1998-99
4.7 Price:	Use only in postgraduate courses
6. META-META	
6.1 Author:	Bela Markus
6.2 Last modified:	21 May 2000
6.3 Language:	English
6.4 Version:	Mihály Agócs, director of CSLM, 22 May 2000
7. COMMENTS	



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Conclusions

- The e-Learning method is not a fully automatic process.
- Preparation for the synchronous session needs a lot of time
- The business model is a key issue
- We have to find the ways of motivation for the update of the course material



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