# Open Systems in eLearning

László KOTTYÁN, Hungary

**Key words**: eLearning, MOODLE

**SUMMARY**

The paper presents the educational portals of the College of Geoinformatics in Székesfehérvár, Hungary (hereinafter the College) related to distance learning forms of education, particularly to e-learning. The College tries to implement modern forms of education, which are flexible, cost saving, timesaving and reflect the requirements of users. The educational portals based on an open system called MOODLE.

## 1. The Educational Portals at the College

Two web portals have been implemented in 2005 for educational purposes at the College reflecting two forms of education. The first form of education is full time and part time learning form for BSc/BA students. The second one is the distance learning form for postgraduate students. The decision to run two portals was made based on different requirements of described education forms as for example: different educational and organisational structures and different e-learning solutions. Both educational portals were created based on MOODLE software (**Figure 1**).
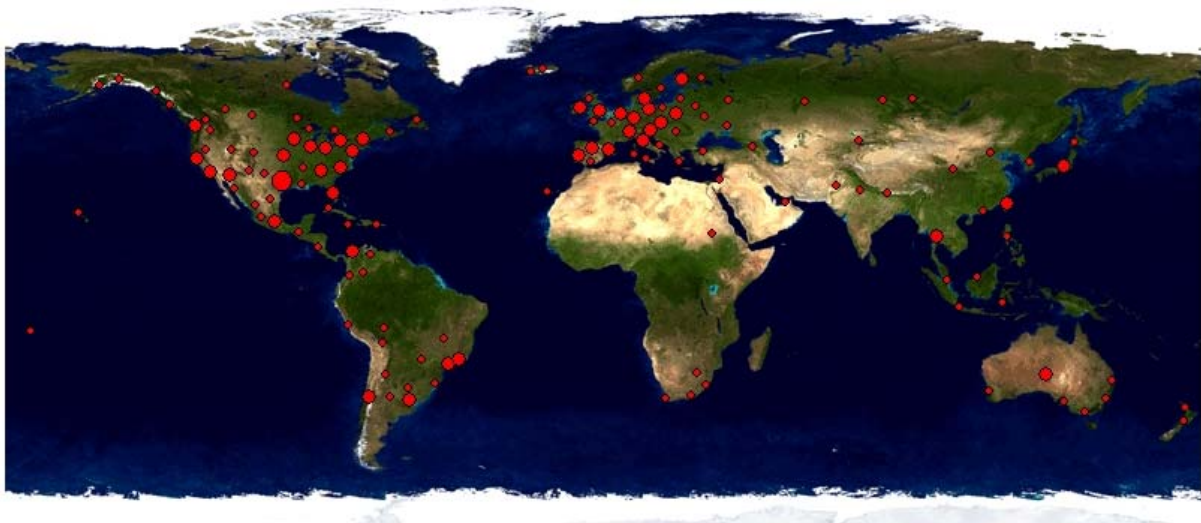


Currently there are 10662 sites from 152 countries who have registered.

Figure 1. MOODLE sites (source: http://www.moodle.org)

The first educational portal "EGEO" (http://www.egeo.hu) (**Figure 2**) was set up for full-time and part-time graduate students. The EGEO portal has mainly the role of additional source of information for students. The system does not maintain the data of enrolled students centrally, because it would be too difficult to follow the activities of all students (approximately 1000 students) and also because of applying ECTS – European Credit Transfer System. The educational portal also enables the access to the learning materials in digital form. The students have to perform two consequent steps to reach the learning materials. Firstly, they have to register to the education portal EGEO and secondly they have to enrol to the specific course.



Figure 2. EGEO main page (source: http://www.egeo.hu)

The second educational portal targeting the postgraduate students is called Virtual GEO portal (http//www.vgeo.hu) (**Figure 3**). A central administration is used at Virtual GEO portal because of relatively low number of students and subjects comparing to previously described EGEO portal. The functions of Virtual GEO portal are more complex including the tracking and registry functions. Recently there are three educational opportunities at the Virtual GEO portal. The UNIGIS, which was already mentioned, is an international network of universities providing a programme of distance learning education in GIS. Each institution from the network offers a diploma qualification on postgraduate level. Development and translation of educational materials is undertaken by the members of the

network to meet national or market sector needs (Markus, 2004 a). The next educational programme – Constructional geodesy – is offered only in Hungarian language to surveyors. The last educational possibility offered by Virtual GEO portal at the moment is an individual multipurpose e-course "UNIPHORM – Introduction to Open GI Systems" (**Figure 4**). This course is currently in pilot testing phase within REVE project – Real Virtual Erasmus. All educational programs were added at Virtual GEO portal to make the learning for student more simple and suitable and easily accessible (Bleyerova, Kottyán, 2006).
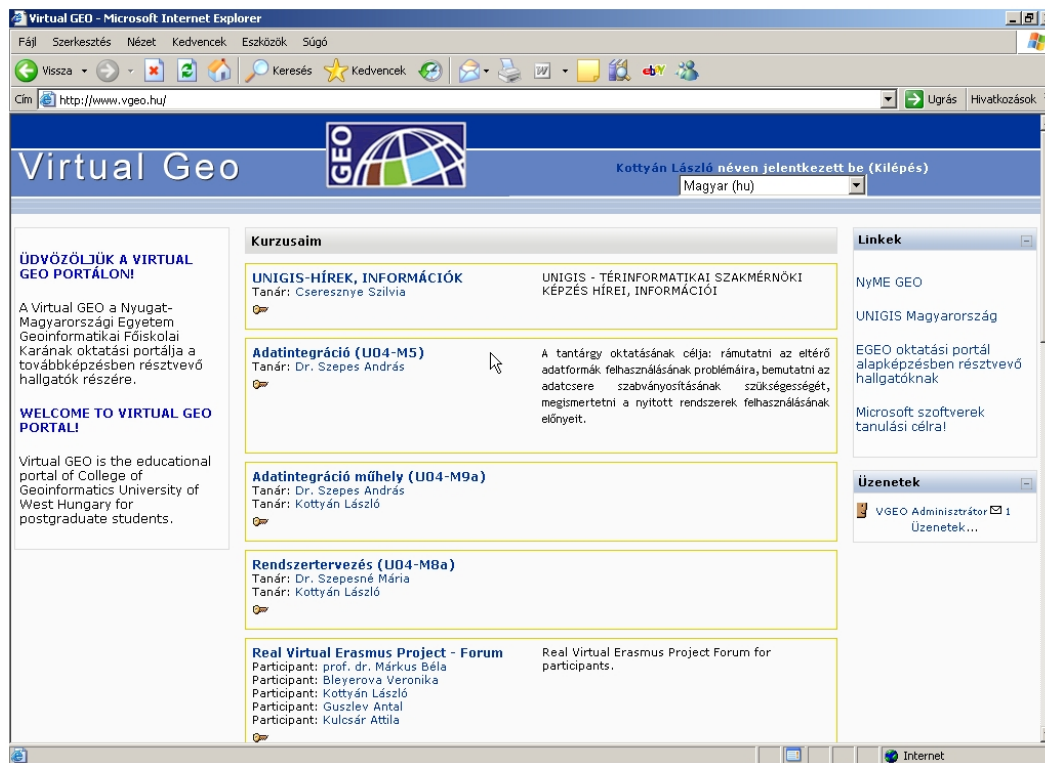


Figure 3. Virtual GEO main page (source: http://www.vgeo.hu)

## 2. Portal management

The Modular Object-Oriented Dynamic Learning Environment (MOODLE, 2006) is an open source, free e-learning framework, and course management system with good customizing capability focusing on student-centred learning. By using the MOODLE software, several user roles are defined in portals. Each role has different rights to access and modify data. The Administrator is able to maintain the whole portal including portal development, user management and course management tasks. Course creator has right to create new courses, upload content to the course and add users to the course. Teacher is able to upload or modify the content of the course, communicate with students, and evaluate them. Students have the right to display and download course content and perform activities. The individual roles requiring specific skills leads to creation of course teams who are responsible for course maintenance, updating and availability.

Figure 4. Open GI Systems e-course (source: http://www.vgeo.hu)

The EGEO portal for graduate students uses a decentralized system for the administration and management tasks. It means that each department of the College has own course-creator, who is responsible for maintenance of all courses of the department. This structure enables different level of teachers' involvement in course activities. The teachers, who prefer traditional education methods, provide the digital materials to the course creator, who uploads them to the portal. All course materials are available for students through course. Teachers with ambitions of active participation on course during the semester have possibility to maintain materials by themselves with full support of official course creator. This approach enables to keep the course content in active form and updated.

The Virtual GEO portal, which is used for postgraduate forms of education, has only one course creator, who is responsible for all courses and teachers have no right to upload course content by themselves. The teachers' main task is to evaluate and assess students. This system is so called centralized and is suitable for maintenance of distance learning programmes.

A course itself is a collection of digital education materials and activities related to a subject or module. There are several possibilities to present a digital materials in MOODLE environment like web pages editing, linked files (e.g.: pdf, text, ppt, and etc.), displaying flashes or other multimedia contents.

The interactivity of portals is enabled by wide scales of activities. The College uses the following activities and communication methods in the courses available on portals:
o Chat Rooms,

o Forums,

o Assignments,

o Questionnaires,

o Wikis,

o Quizzes (Integrating Hot Potatoes quizzes or using built in quiz creator module),

o Messaging system,

o Glossaries,

o E-mail sending block,
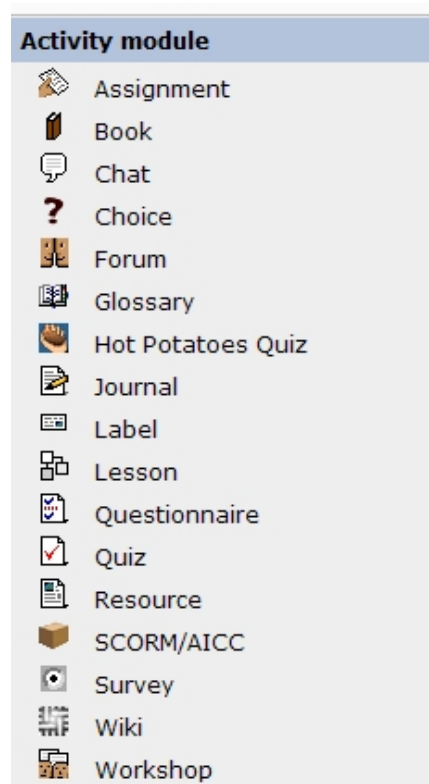
o and other useful modules (**Figure 5**).



Figure 5. List of usable modules (source: http://www.vgeo.hu )

On EGEO portal besides the course materials and activities of one semester, there is possibility to create some thematic contents. We set up the EGEO LIBRARY category for supporting the publishing on Internet. The following 3 categories were created in EGEO LIBRARY:

- o  Science: it can contain the results of activities of GEO researchers or high quality diploma works of students.
- o  Education: in this category can be placed materials in greater detailed field, information about exchange programs, glossaries, wikis, etc...
- o  Free time: it is for pages in different sphere of interests, hobbies with chat rooms, forums.

According to conception, pages are maintained by authors or supporting departmental course creator. The type of accessing of contents could be decided at topics namely such as public for Internet users or linited to a determined circle of teachers/students. (Kottyán, Szepes, Szepesné, 2006)

As it was already mentioned the portals are new tools implemented at the College. So it is very important to know opinions of both teachers and students to have possibility for further improvement and development. The first survey showed us that the teachers did not face any particular difficulties as basic training on portal functions was provided to them. The regular training, however, is planned to keep teachers' skills updated and in contact with new trends. Training was also provided to students within the course "Information technology" running in the first semester of their studies. From the first reactions the portals are quite popular among students. However we would like to make more profound evaluation for further improvement.

Besides the evaluation of technological service and support of both portals special attention has to be also paid to Virtual GEO portal, which provides distance education. The delivery system, quality of learning materials, and course structure must be supporting distance learning mode. Pilot testing is a good solution to evaluate all the study materials and to comment upon the standard and method of delivery of the course. A quality team monitors the distance learning aspects and advises on the ongoing development and delivery of the material (Márkus, 2004b).

## REFERENCES

Márkus, B. (2004 a) *Concepts of an eLearning Gateway*, Térinformatika – 2004. Nyugat-Magyarországi Egyetem, Geoinformatikai Főiskola Kar, Székesfehérvár

Márkus, B. (2004 b) *Networked Education in Land Adminnistration*, Térinformatika – 2004. Nyugat-Magyarországi Egyetem, Geoinformatikai Főiskola Kar, Székesfehérvár

MOODLE (2006), http://moodle.org

Real virtual erasmus (2005), http://reve.europace.org/

Bleyerova, V. – Kottyán, L. (2006) International collaboration in e-learning implementation – examples of achievements at the College of Geoinformatics, University of West Hungary, paper, EDEN conference: E-COMPETENCES FOR LIFE, EMPLOYMENT AND INNOVATION, Vienna, Austria

Kottyán, L- Szepes, A – Szepesné, S. M. (2006) Hallgatói támogató rendszer, követelmények és megvalósítások a GEO-ban, paper, Networkshop 2006 conference, Miskolc

## BIOGRAPHICAL NOTES

László Kottyán has an M.Sc. degree in Information Engineering, specialisation of Software Engineering.From February 2004 he works at Department of Geoinformation Science, College of Geoinformatics, University of West Hungary. He's position is assistant professor.From September 2004 he performs Ph.D. studies, the research project is Decision Support in Land Consolidation.

**CONTACTS**
László Kottyán
College of Geoinformatics, University of West Hungary
Address: Pirosalma u. 1-3. Székesfehérvár, HUNGARY
Tel. + 3622516553
Fax + 3622516521
Email: l.kottyan@geo.info.hu
Web site: http://www.egeo.hu , http://www.vgeo.hu