Abstract: Beginning from a chain of workshops devoted to Free and Open Source Software, and Virtual Learning Environments, the present paper resumes the level of use and acceptance of MOODLE learning management system in Romanian educational system. Especially MOODLE platform properties and authors' experience accumulated in e-learning activity, in computer science, are presented. The paper underlines how MOODLE can be used to enhance the students' understanding and enjoyment of science, how it can and will be used for future teacher preparation through a Tempus project, resuming also the authors intention and effort to coagulate the network of national MOODLE users.

Keywords: A LMS, Course Management System, Virtual Learning Environments.

I. LINUX AND VIRTUAL LEARNING ENVIRONMENTS

Since 2003 a national e-learning workshop called „Linux and Virtual Learning Environments” (in Romanian „Linux si mediile virtuale de instruire”) has been organized yearly at “Vasile Goldis” Western University of Arad [1], with the intention to promote the use of free and open-source software (FOSS), Linux operating systems, and Web-based teaching and learning software platforms, like Claroline, ATutor, ILIAS, and especially MOODLE into Romanian educational system. In the usual view, a virtual learning environment (VLE) is a set of software teaching and learning tools especially designed to enhance students’ learning experience by including ICT into the traditional classroom and learning processes (other names currently used instead of VLE are Learning Management System – LMS, or Course Management System – CMS, even CMS is used more for Content Management System). Among these tools, the LVLE meetings are focused mainly on free and open-source educational software (FOSSE), from this category, selecting MOODLE (Modular Object-Oriented Dynamic Learning Environment) [2].

The “Linux and Virtual Learning Environments” (LVLE) workshop was organized to deal especially with VLEs running on GNU/Linux platforms, and to investigate the relationships between existing successful LMS (VLEs) and Linux operating systems.

Between frequently discussed questions during the LVLE conferences is important to underline: The advantages of using of GNU-Linux platforms in educational systems; The Virtual Learning Environments and Course Management Systems; Case studies of e-Learning; Quality assessment in open and distance education, with FOSS platforms; Open-source e-Learning projects;
GNU-Linux and FOSS in Romania, and in Romanian language; Security and ethical issues for ICT use in school; FOSS educational computer games.

In 2006 a satellite programming contest in quite the same topic, called ProInfo, was added to LVLE seminars for an extra motivation of student team participation.

Since 2009 both manifestations, LVLE seminar, and ProInfo contest, are included into a Summer School called “Computer Science at the Castle”, taking place at the generous place of the old Castle (with its great park and botanical garden) from the Macea village, 28 km away from Arad.

As a national e-learning conference, LVLE has been yearly organized and supported by “Vasile Goldis” Western University of Arad, in a successful cooperation with Arad Linux Users Group, Cultural Society POLYGON Cluj-Napoca (former organizer of RILW conferences), and “Alexandru I. Cuza” University of Iasi.

1.1 The LVLE direct results

The main result of LVLE meetings seems to be the building of a community of FOSS-VLE users into the Romanian Educational System. As well there are some research results in the field. For example, two active student participants from LVLE succeeded in developing a paint tool for MOODLE platform. This project was presented and discussed at corresponding development stages at the 5th and 7th edition of the meeting (LVLE 2007, and 2009 Summer School “Computer Science at the Castle”). “The paint tool is being developed by Mihai Sucan, from Arad, Romania, and mentored by Martín Langhoff. Mihai has already developed a proof-of-concept/demo web application Paintweb which you're welcome to have a play with”. [Helen Foster “What you Paint is what you get!” 2009, http://moodle.org/mod/forum/discuss.php?id=122849]. See also “Paintweb: Online painting application”, Project hosting on Google Code http://code.google.com/p/paintweb/.

1.2 The LVLE indirect results

As an important indirect result of LVLE seminar presentations there is the “Vasile Goldis” Western University of Arad staff decision to replace unused commercial Blackboard product already installed into the Communication Centre with FOSS MOODLE LMS. MOODLE was than configured step by step to be used by each faculty of the University. Now MOODLE is used in the across the entire University for courses delivery, student activities, tests and student evaluation.

As a second main LVLE result, one of the authors team succeeded since 2010 to organize the MOODLE-Romania domain at http://www.moodle.ro working to build the national MOODLE users network.

Finally, as a third important indirect result of the LVLE meetings, with all implicit promotion of the MOODLE system, the “Vasile Goldis” Western University of Arad became in 2010 the second European partner into a Tempus project, called TEREc, for the Moldavian future school teacher preparation to use ICT. An EU project were the teacher training on MOODLE platform will be the key.

II. THE USE OF MOODLE

Beginning with a first (1.0) version from 2002, MOODLE is a modular and open source learning management system, i.e. free to download and easy to install to a common PC configuration, without the need for special hardware resources [2]. MOODLE could easily be installed and work on a Linux platform with Apache Web server, PHP and MySQL (or PostGress), but as well on a MS Windows 2003 (or 2008) Server with IIS, PHP 5, and MySQL. That means that DataBase server, PHP, and Web server must be installed before MOODLE (http://docs.moodle.org/en/Administrator_documentation).

As usual at open source software world, it is possible to select an already pre-compiled MOODLE package corresponding to your Linux type distribution, or to compile the MOODLE source package. It is possible to install it to a desktop-like distribution (as Ubuntu), or to select an optimal, server like, Linux distribution, as Suse Linux Enterprise Server (SLES), Fedora, XAMPP or SLAMPP.
As MOODLE main author, Martin Dougiamas is a good teacher, being extremely open, active and communicative, after more than 9 years of development, a lot of documentations are accumulated, as well a lot of community forums, books and user guides. All to help novices to discover and use MOODLE.

2.1 MOODLE in UVVG

In the beginning, for the installed and unused Blackboard the University paid thousands of USD per year, and by contract the duties were proportional to the number of delivered courses and the number of registered students. Replacing Blackboard with MOODLE was a good business, and an impulse to test and to use it. MOODLE LMS came after some other FOSS LMS installations and tests (ILIAS, Amtutor, and Claroline). In the beginning, the hardware configuration imposed by Blackboard was used, namely a bi-processor PC with 2GB RAM and 80GB HDD.

In the first academic year (2004-2005), running MOODLE 1.2 version, 17 courses were successfully loaded, and the platform started to be used by some hundreds of students. After that, MOODLE was successively updated, on a yearly basis, passing to 1.5, 1.6, 1.8, and 1.9 version, until today's 2.02 version.


The number of registered students grew nearly ten times from 2796 in the beginning, to 20976 in 2009, and 18727 students, until now in 2010-2011 academic year.

All nine faculties of the University are present, each having an own entrance into the MOODLE platform, at http://cursuri.uvvg.ro (Figure 1).

The Communication Center team correspondingly paid attention to the hardware-software upgrading to ensure the server's good performances. Since last November the MOODLE 2.0 has been used.

2.2 MOODLE acceptance in UVVG

Generally students like ICT methods, while a lot of teachers are unable to use it, or dislike computers.

It seems that a medium teacher accept the MOODLE usage primarily for student knowledge testing, for student final examination. Because of this precise and rapid evaluation of student answers, with proper methods to reduce the chance for cheating. Consequently, online examination is extensively used at “Vasile Goldis” Western University. As a result, there are two different MOODLE sites: one for examination, at http://examene.uvvg.ro (Figure 3), another for courses http://cursuri.uvvg.ro (Figure 1).

The local configuration of the system, as a learning virtual environment, especially as friendly and helpful entry pages could be the first step for a successful use of it, by teachers and students. Understanding this, Martin Dougiamas and other MOODLE developers and promoters offer a lot of interface models, and interesting solutions.

In the Romanian implementation of the MOODLE UVVG configuration, for the so-called platform of courses, after the usual authentication (login) procedure, a teacher will see at his desktop a window like the one in Figure 1, to select the faculty, then his/her course space.

Selecting, for example, the Medical Faculty, with a click to the corresponding icon (the third position of the first line, in this case), another window will be opened, giving the chance to select the speciality, and to search for a course, like in the (Figure 2).
In the same main entry window (Figure 1) there are links to user guides for teachers, as well as for students; also a link to a questionnaire asking the student to answer by email 24 questions regarding his impressions, difficulties, and the e-lesson impact. But the intended evaluation study isn't finished yet.
The UVVG Communication Centre team involved with MOODLE platform maintenance spend a lot of time and energy helping teachers to load their materials, lessons and quizzes. Changing one's teaching style isn't easy! And good user manuals in Romanian yet missing. Also, attention must paid to server specific security problems [6].

![Figure 3. The examination site window](image)

### 2.3 MOODLE in Romania

At the main MOODLE site, [http://moodle.org](http://moodle.org) the romanian interface is partially implemented, as there are now more than 80 languages accepted. Correspondingly, at [http://moodle.org/sites](http://moodle.org/sites) there is a registration place for new MOODLE installation. Here, 50400 currently active sites are reported as of now (March 15, 2011), registered from 211 countries, 8512 of these requesting privacy and are not listed. All MOODLE sites are regularly verified, and unreachable or invalid sites are removed.

132 Romanian sites are registered and listed, and 29 registered but not listed. But for example in Poland there are 1057 MOODLE sites totally, in Spain 4483, while in the Republic of Moldova - only 15. But as to each FOSS package, the MOODLE download and installation is totally free, while the registration is at the user' choice.

That means that now, in Romania there are at least 161 installation of MOODLE ([http://moodle.org/sites/index.php?country=RO](http://moodle.org/sites/index.php?country=RO)), but probably many more, as noted by authors, based on LVLE reports. Among public MOODLE sites, different stages of configuration and use are visible. Some registered sites accept guest visitors and consequently at least some courses are visible, while to other sites a visitor can only see the standard interface.

There are interesting MOODLE installations, for example at Transilvania University of Brasov [http://auto.unitbv.ro/moodle](http://auto.unitbv.ro/moodle) into an European research project called COMPLETE (Figure 4). Also at the High School from Orasie (Ecolegiu » Colegiul National „Aurel Vlaicu” Orasie [http://www.colegiulavlaicu.ro/moodle](http://www.colegiulavlaicu.ro/moodle)), the first Romanian school using MOODLE, since 2003. Where professor Daniel Popa prepared the first MOODLE interface translation in Romanian language.

A detailed analysis of the configurations and offers of all the registered active Romanian MOODLE sites is being developed.
2.4 MOODLE Romania Nework

In 2010, after some years of work and negotiation, one of the present authors (C.Herman) succeeded in configuring the MOODLE Romania site http://www.moodle.ro, gradually developing the local network of Romanian MOODLE users. Step by step the MOODLE.ro domain will collect and offer news from MOODLE.org, romanian guides, best practice examples, and courses maybe.

The project was presented and received a nomination at the National Conference for Virtual Education - CNIV 2010.

2.5 MOODLE in a Tempus Project

In the context of educational system difficulties, in Romania, and in Moldova as well, with an average age of teachers higher than 45 years, and the corresponding divide between teachers and their pupils/students, the question on how to prepare future as well as in-service teachers to use ICT became extremely topical. At the same time, due to the continuous social deterioration of the school teacher status, a lack of interest in becoming school teachers is recorded among HE students. In Romania, it seems that our staff is attempting to solve the situation by repeatedly changing the National Education Laws, changing the school structure, curriculum, textbooks, and types of student assessment, causing increasing confusion among teachers, parents and students.
The Moldavian educational system is still confronting the same issues as it did during the totalitarian period. The National Educational Modernization Programme of Moldova defines the framework for updating of curriculum, for using new technologies and methods of teaching-learning-evaluation, and linkage of education with the labour market. Namely, some teachers are trying to rethink the teacher-training institutions' curriculum, mainly at the State Pedagogical University of Chisinău.

The staff of teacher-training faculties is aware of the necessity to introduce many changes in the area of content, structure, teacher methods, use of new Information and Communication Technologies (ICT), promoting partnerships with schools in order to prepare skilled graduates for the labour market. However, they do need support.

Within the Tempus programme, the project Teacher Education Reform and Update of Curricula (TEREC) was elaborated and approved. The partnership includes Aveiro University - Portugal (coordinator), Tallinn University - Estonia, “Vasile Goldis” Western University of Arad - Romania, and 11 education establishments from Republic of Moldova, having the State Pedagogical University “Ion Creangă” from Chisinău as local coordinator.

The project period is October 2010 – October 2013.

The main goal of TEREC project is mutual collaboration seeking to enhance the quality of teacher training in the universities from the targeted Partner Country (Moldova). Apart from updating the curriculum [4], the project's goal is to harmonize teacher training with the demands of the labour market and the Bologna requirements, applying the Tuning (http://tuning.unideusto.org/tuningeu/)
methodology. The project target groups are academic staff, as well as students from teacher education faculties.

In order to attain all the project’s goals the project partners established the need for distance education methods, i.e. a Learning management system with e-learning methods.

Consequently, a first step in authors contribution to the project involves the elaboration of good guides, in Romanian language, for the beginner MOODLE users, one guide for students, another for tutors; both in print, and online format.

III. CONCLUSIONS

MOODLE LMS, as an advanced and stable open-source software package, seems to be the best e-learning or Web-teaching platform for the Romanian educational system, flexible enough to be configured and used in middle school as well in HE, as it now accepts quite a friendly Romanian interface.

This paper summarizes authors efforts’ promotional and research activities, a part of the effort invested in this respect.

But even if MOODLE is one of the best LMS, real e-learning requires a well-prepared tutor.

References