

CZU 004.4:378

ANALYSIS OF PRADO2 & MOODLE E-LEARNING PLATFORMS

Ludmila PECA, PhD., *Specialty Education Sciences*

„Ion Creanga” State Pedagogical University,

Scientific coordinator: **Roza DUMBRAVEANU, dr.,** *associate professor*

Abstract: *In this article I will talk about the importance of the platforms at the time of the study. As a PhD student, I will carry out a comparison of two major platforms as well as a description from my perspective as a student that I am. For this I will analyze in detail the platform Prado2 and Moodle with an analysis of usability, accessibility, availability and security.*

Finally I'll do a SWOT analysis of both platforms in order to distinguish the differences between them, highlighting the strengths, weaknesses, opportunities and threats.

Keywords: *E-learning; educational platform; free software, analysis, accessibility, usability, safety.*

(1) Introduction

This article describes the author's experience as a professor in the field of Information Technology and Communications. Based on modules developed by the flipped classroom approach [1]. The flipped classroom is a pedagogical approach that focuses on student-centered training. Students receive guidance from the teacher, following themes and activities in the electronic environment. Thus, they have access to the content and ask for additional explanations from the teacher or colleagues.

Until the application of e-learning in the post-secondary technical vocational education institution I had the experience to work as a lecturer at the Technical University of Moldova (ATI Chair) and as an instructor in the field of Network, CISCO.

Until now I have worked with the platforms netacad.net and moodle.ati.utm.md. On the platform netacad.net I have carried out functions fulfilling the roles of instructor / teacher and on the platform moodle.ati.utm.md I have fulfilled the role of creator / professor of course.

We are looking for possible solutions to:

1. What are the causes and what are the current obstacles to learning?
2. What could be done? What should be changed?
3. How could the change be achieved?

At the beginning of my pedagogical career, I have read in a student's note: I don't want to have teachers who think they are doing modern lessons simply by using the projector in the classroom or writing chalk on the board or even limiting the interactive chart.

Questions: What would be the ideal teacher's portrait? What would be the teaching methods appropriate to our century? How it would look a successful course?

In response, it would be the use of modern technologies in delivering and presenting courses, switching to virtual learning tools, e-learning processes, using virtual learning environments, that is to delivering courses in the computer network using Web technologies current, certainly more attractive for our students today.

E-learning could be considered as a natural evolution of distance learning, using the latest ICT tools. In fact, some authors consider that e-learning is a new generation of distance learning, even if they still point to significant differences between the two concepts and emphasizes that: "E-learning is no more than something (...). E-learning consists in making things different "[1].

Electronic mediated learning is becoming more widespread in the learning process. Accessibility and variety of online content encourages more and more people to engage in learning using digital technology. However, there are different factors that influence learners and teachers in adopting the e-learning environment.

E-learning systems have been widely used and applied in education over the last 20 years [6]. E-learning consists of using information technologies to provide information for education and training. It is one of the most important developments in the IT industry e-learning is becoming a popular way to acquire knowledge [2] for many students around the world. The United Kingdom Chartered Institute of Personnel and Development (CIPD) provides another interpretation for eLearning: learning that is distributed, enabled or mediated using electronic technology for explicit training in organizations. There must be no different definition for the world of work, for schools and universities, and for personal development.

Positive, most frequently mentioned, e-learning features: content can be accessed at any time and place, through asynchronous interaction and group collaboration. According to [2] it is possible to decide the time and place of accessing digital content, the main benefit for the binomial education (professor/student).

The eLearning Platform, or the Learning Management System (LMS), is a virtual learning space that aims to facilitate training for both companies and educational institutions. Students have the opportunity to interact in forums, tutorials and chat, in a collaborative learning environment. The platform is not just a warehouse of theoretical materials or information. The implementation of the platform greatly favors the learning of students as they are directly involved in the process, through the development of knowledge, autonomous working capacity and optimization of study time.

The Learning Platform becomes a facilitator of learning processes that allows the use of multimedia resources, making learning more motivating by continually updating content through interactivity that facilitates collaborative learning through accessibility from anywhere and at any time, to be able to learn when it is needed (just-in-time learning) and immediate feedback. The teacher can adapt teaching-learning processes to learning styles, helping students achieve the goals originally set.

Every student is unique, has his own learning style and learning rhythm. The materials on the platform support teaching, encourages active participation of students in academic training. Collaborative processes can develop activities with technological resources, as shown by the experiences of universities.

Overall conclusion of the study [8]: e-learning is part of the new dynamics that characterize educational systems at the beginning of the 21st century, resulting from the blending of different disciplines, such as computer sciences, communication technologies and pedagogy, as all the definitions contain characteristics of more than one discipline. Consequently, it is very likely that the concept of e-learning will continue to evolve over a long period of time. In today's world, learning needs change very quickly, and the concept and functions of the e-learning concept need to be continually adapted to these needs.

At the end of each course, students must complete a set of questions that are designed to collect data about the elements that influence their attitude towards e-learning. These questions are intended to measure the usefulness and ease of the learner-perceived platform, as well as to collect responses about the different types of content included in e-learning materials, questions designed to examine a general attitude towards e-learning.

(2) Analysis of Prado2

In this section I am going to analyze the Prado2 platform with an analysis of accessibility, usability, availability and security.

But before going into details I will make a general analysis of the platform. From my superficial point of view the platform is intuitive, with easy access having your username and password of the same email provided by the University of Granada.

I rely on the profound analysis of the final thesis, written by the graduate of the Granada University in Computer Engineering [12].

A general analysis of the tool was done to understand the platform's possibilities, the format of progress in adapting it to UGR's needs (University of Granada):

Usability of the system - ease of use.

- 1) Visibility of the system - the system informs the user about its status.
- 2) Meaning of the user - to use words and phrases known by the user.
- 3) Control and freedom for the user - they have options of choice and information.
- 4) The user must adhere to the studio platform rules.
- 5) Preventing errors - the system locates and asks the user.
- 6) Flexibility and efficiency of use - can be used by beginners and experts.
- 7) Help and documentation - easy in the layout structure of the files, easy access to Help.

There are points of demand by the user to the studio platform. Requirements the platform is trying to answer by introducing new tools and expanding possibilities.

Additions and administration platform requirements:

1) We have not seen the platform adapted to the legislation that includes access to disability education platform education.

2) For securing, Prado2 does not have the https protocol enabled. The platform was checked for vulnerabilities by launching an attack to capture the information. When a user logs in, try to steal the tutor variables. On this subject, Moodle developers recommend default activation of the https protocol.

3) In the case of simultaneous access of several users, the response time of the platform was checked if the platform suffers interruptions. Availability - not depend on the number of users accessing simultaneously - the platform.

The adapted version platform uses Apache as the http server, making it more secure against possible targeted attacks. With cloning capability, it's not possible in a proprietary server, a strong point.

(3) Functional architecture of the Moodle e-learning platform

Moodle is one of the most widely used LMS platforms, especially for academia. The platform is permanently modified and enhanced with elements. It can be downloaded for free, licensed under the GNU General Public License. The program to increase quality and efficiency in computer-assisted education by providing theoretical support by continually informing about significant initiatives and events in the field by promoting the best solutions and systems and services for e-learning. Moodle is a system for creating and managing courses, a free learning management system that allows you to create complex, flexible online study experiences. I use the phrase "online study experiences" instead of "online courses" often suggesting a series of webpages, pictures and maybe some animations, and a test, provided online. There could also be communication by e-mail or online consultation between the teacher and the students. However, online study can be much more complex than that. Designed as any virtual learning environment, Modular Object Oriented Distance Learning Environment (MOODLE) works from a Web server and modularity ensures its power and diversity. It includes a lot of components designed to mobilize the learner, to exchange information, set ideas, check skills and knowledge. Of course, it requires a lot of effort and dedication from the one who assumes the role of administrator, but also from the creative professors and course providers.

A context is a space in Moodle, where roles can be defined. In other words, a context is the right of a particular role to define a user's capabilities on any Moodle page. It is possible to assign to a user different rights based on a specific context. For example, a user may have student rights for a course and at the same time may that teacher's rights on a particular forum, or a user may have the rights of a teacher in a particular course and student rights in another. A role can also be seen as the user's rights identifier in a specific context. When Moodle is installed for the first time, a number of standard roles are automatically created. Course design and Moodle management have been improved as follows: [7]. The "Final Test" test, which is a JavaScript-based test within SCORM content, was split into a Moodle quiz module. "Conditional activities" were then adopted to allow users to take the "Final Test" after the SCORM content was completed. [11] The course is reset annually to delete all SCORM tracking data. The user's address and IP address were designed to design a SQL query return data by anonymizing the data.

Main modules of the system, features that online self-training offers, virtual classroom, online testing, discussion and knowledge, checks, administration and security.

Online self-training and virtual classroom

1. The self-taught module allows users to deliver content in a pre-set, asynchronous order, allowing them to browse the content at the rate they want.

2. The virtual class allows content delivery to users, synchronous, learning is assisted by an instructor. The instructor can communicate audio and video with learners. The instructor and students can communicate via chat. The instructor has the ability to run tests and see results immediately. The instructor can adjust his course plan during the course.

Online testing

1. The system allows you to run tests with different types of questions, randomly built from question sets, automatic correction, and report generation.
2. The platform offers the teacher the opportunity to plan the evaluation.
3. While solving the test, the student will know how long it takes to solve the test. Upon expiration of the allocated time, the test will be automatically closed and the system will show the result.

Discussions, knowledge

1. The system also includes forums for students so that they can interact with teachers or colleagues for debates, exchanges of experience (answers to questions, debates, opinions, etc.). Each course will have its own forum on the e-learning platform.

2. The system allows users to exchange private messages. The messaging system also supports sending events by email to each user.

Reviews

1. The platform provides the ability to monitor and control the report process, can be exported from the application interface in a format that allows processing (XLS or CSV) for advanced analysis, printing.

2. In order to monitor the performance of the indicators, several types of reports will be implemented so that at any time there is a clear picture of the activity carried out (list of users connected at one time, statistics on users consisting of the number of completed training activities, in-service training, number of unintended training activities, - detailed progress for each training activity traveled, statistics on test sessions consisting of the number of users enrolled, number of tests completed, number of tests in progress, results obtained by each user in a test, statistics on the distribution of results to a test for a group of users tested will be found in the complex training system)



Administration and security

The Moodle e-learning platform provides a controlled learning environment through restricting access to users with a valid username and password. Each user will be given a role that gives them certain platform usage rights.

(4) Analyze SWOT (Strengths, Weaknesses, Opportunities y Threats) Prado2 / Moodle

The e-learning platform or the Learning Management System (LMS) is a virtual learning space that has to meet the needs of students and staff.

The learning process has come to a new extent with the development of the e-learning industry. Therefore platforms that incorporate Learning Management Systems (LMS) have become extremely numerous. We will analyze Prado2 / Moodle with the emphasis on the advantages and disadvantages of each and the distinctive features it presents.

SWOT Analysis		
Strengths	Easy-to-use, manageable course and calendar format. Format social media style.	Easy to use, cost effective E-learning application favored by educators. Online learning is versatile Interactive learning.

	Supports media forms. Set up confidential privacy.	Is open-source. The e-learning platform is extremely flexible, can be tailored to the needs of each type of user. Functions fulfilled by Moodle can be multiplied. Integrates external applications Develop various plugins. Availability in multiple languages. Available on any device connected to the internet.
Weaknesses	You should check the updates frequently. Extra time for using applications. Easy to lose in the multitude of jobs.	Blocks such as the database, SCORM API calls, and the creation of the call-to-database process that affects. Moodle's performance became evident with many simultaneous accesses and a large number of queries in the database. The reduction in queries is effective in improving Moodle services. To include additional options, users need to have coding knowledge. Additional charges (eg video calls) require fees. Limited options. User has to work with plugins. No live tech support. Difficult setup. Difficult to learn.
Opportunities	Students can add videos, pictures, and post comments to others. Allows students to engage in learning with an expansive messaging system.	Expand capabilities so it can be used by larger universities.
Threats	Students could post inappropriate pictures Cyber bullying via posts may occur.	Technology is always changing and company might to adapt.

(5) Conclusions

I think all I want to do here is to point out that all teachers who use the Learning Management Systems (LMS) do it for delivering, tracking and managing the learning process. Content delivery and ability to keep students engaged within the content will drive much of the broader **ed tech** market. Choosing the platform, you are a strategically important issue for institutions, especially for online programs. Regarding the efficiency of using e-mediated learning from the quantitative point of view, empirical results are required to determine the main factors that affect students' intent to engage in e-learning. The usefulness of new technologies, content relevance and design are very important for the efficiency of e-learning. In addition to the usefulness and effectiveness of electronic learning systems, it is important to create rich content with audio and video clips, animations and hyperlinks. These will enhance students' motivation to use e-learning, will generate positive attitudes towards learning.

(6) Bibliographical references:

1. Cakir, R., & Solak, E. (2014). Exploring the factors influencing e-learning of Turkish EFL learners through tam. *Turkish Online Journal of Educational Technology*, 13(3), p. 68-76.
2. Capper, B. J. (2002). *E-Learning Growth and Promise For the Developing World*, p. 7-10.

3. Concannon, F., Flynn, A., & Campbell, M. (2005). Benefits of E-Learning. *British Journal of Educational Technology*, 36(3), p. 501-512.
4. Costley, J., & Lange, C. H. (2017). Video lectures in e-learning: effects of viewership and media diversity on learning, satisfaction, engagement, interest, and future behavioral intention. *Interactive Technology and Smart Education*, 14(1), p. 1-19.
5. Bouhnik, D., & Marcus, T. (2006). Interaction in Distance-Learning Courses, 57(3), p. 299-305.
6. Kim, K., & Bonk, C. J. (2006). The Future of Online Teaching and Learning in Higher Education: The Survey Says, (4), p. 22-30.
7. Pérez R, Rojas J, Paulí, J. Algunas experiencias didácticas en el entorno de la plataforma Moodle. *Revista de Informática Educativa y Medios Audiovisuales*. 2008; 5(10), p. 1-10.
8. Damjanovic V., Jednak S. & Mijatovic I. (2015). Factors affecting the effectiveness and use of Moodle: students' perception. *Interactive Learning Environments*, 23(4), p. 496-514.
9. <http://www.irrodl.org/index.php/irrodl/article/view/1161>
10. http://www.ugr.es/~jsenso/derecho/Acceso_Prado_CEVUG.pdf
11. moodle. <https://docs.moodle.org>
12. [Serrano_Collado_Ernesto.pdf](#)