

A PROPOSAL TO ENHANCE THE USE OF LEARNING PLATFORMS IN HIGHER EDUCATION

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ABSTRACT

The results of several studies conducted to analyze the quantitative and qualitative use of learning technologies in Higher Education in Portugal showed that, in general, these technologies are not used systematically and effectively and e-learning platforms tend to be relegated to repositories of contents rather than as full-fledged tools actively enabling and promoting learning. Several gaps were also identified at the management, pedagogical and technical levels. Following best-practice in this domain, a holistic intervention including these three levels is crucial to achieve positive results. Therefore, following these studies, a set of guidelines and recommendations was created to raise the level of technology adoption in higher education and improve the educational performance of each institution by raising teaching/learning levels so that they are in accordance with the Bologna paradigm. This way it is possible to have a systematic approach, expanding the intervention to the entire institutional campus and resulting in an effective learning platform usage by teachers and students.

KEYWORDS

Learning technologies; higher education; teaching/learning processes; e-learning; e-learning platforms; learning management systems

1. INTRODUCTION

The Web 2.0 advent resulted in the creation of structured online platforms where everyone could publish their own content, therefore opening the doors of internet publishing to the general public. Learning Management System (LMS), or e-learning platforms, are specialized online platforms that support e-learning, that is, online learning and training through content and communication sharing. From an early moment the LMS Moodle was one of the favorite platforms for two reasons: it was as free and it had all the versatility of other e-learning platforms but still keeping its concept and usage simple. Nowadays Moodle has millions of users and thousands of schools use it in a daily basis.

To understand the actual status of the use of learning technologies in the Portuguese Higher Education a case study was conducted, structured in three basic stages, as shown in Figure 1:

- Study for analysis of surrounding context;
- Intervention to specify the parameters of the research and its implementation;
- Assessment and Reporting, for data collection and formulation of conclusions.

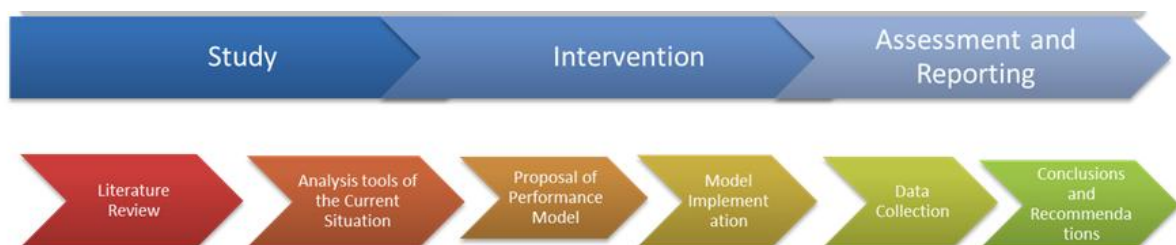


Figure 1. Methodological research scheme.

The study began with a bibliographical research on existing projects and initiatives. Then, to collect more specific and updated results, three analyses of the use of the Moodle platform were done, allowing the identification of gaps which needed solution. Based on the conclusions of those analyses a set of recommendations was designed to take full advantage of the use of an e-learning platform in a particular institution, without losing content value and maintaining a balanced experience for all stakeholders. Figure 2 depicts in more detail each of the sub-steps. This set of rules or recommendations was also influenced by the application of the Bologna paradigm (European Union, 2006), so that the use of this platform is a starting point for the student’s exploration of many subject related with his/her course.

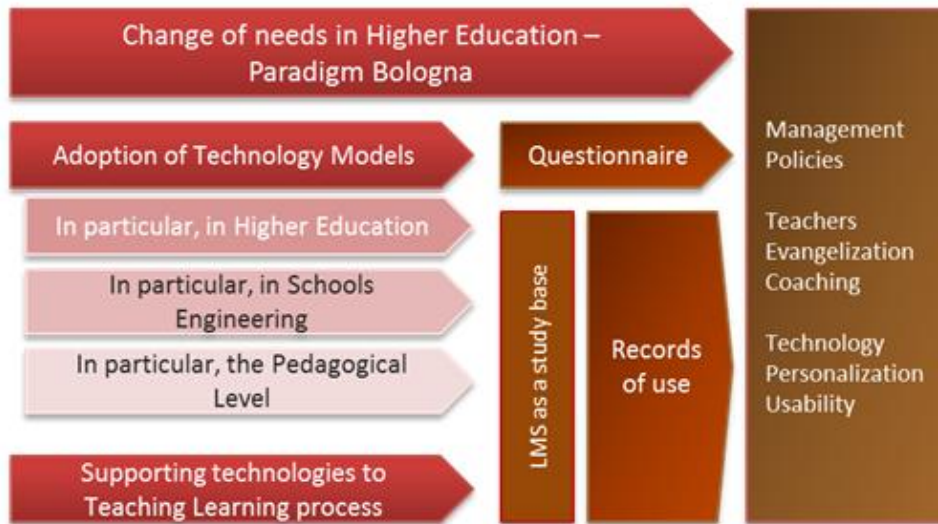


Figure 2. Steps towards the use of e-learning.

The purpose of management intervention is to assure the creation of the necessary institutional conditions for the effective adoption of technology in teaching. This would lead to a standardization of all departments in the institution, contributing to the improvement of results at a teaching/learning level in the context of Bologna.

Management intervention should address political-strategic decisions. The role of the researcher includes the management persuasion about these studies reliability and adoption of the proposals. A proposal to include teacher’s department in this initiative was presented with the intention of improving teacher’s tasks through the platform usage. CUs approval rates would, therefore, be also improved. The proposal at technology level embraces the personalization, usability and customizing the platform features and tools to the users.

This implies the development of 4 or 5 software modules to be integrated in the platform. The aim of the intervention at this level is to upgrade the platform into a user-friendly tool for teachers and students so that it is more profitable to the teaching/learning process in the context of Bologna. E-learning platform success in the user’s community is, this way, enhanced.

The analysis of the implementation of all proposals will then check whether your application and action taken at the institution has made recommendations to the Bologna process of teaching/learning in Higher Education leading to a positive influence on the current practices of the institution.

2. STUDY

The initial part of the research process was divided in two main stages:

- Literature Review - Starting point of that work, allowed to ascertain the key areas. An analysis of the Bologna declaration and the associated paradigm, as well as their influences on the Portuguese higher education has been made. We also studied the technologies to support the teaching / learning process. We also analyzed the adoption of models of technology and adapted to the particular situation of use as educational support in higher education.

- Analysis of Current Situation - This step allowed to take knowledge of the current situation of adoption and use of technology-based educational tools in higher education, focusing on the use of Learning Management Systems. The reference model was UTAUT - User Acceptance Model of Technology Use. The use of an e-learning platform (Moodle) in three different scopes (always in the scope of higher education and, more specifically, engineering) was analyzed (Marques et al, 2010a) (Marques et al, 2010b) (Marques et al, 2011).

Data was collected in three consecutive academics years. The use of the platform as a content repository is far lower than it would be expectable (from 30% to 60% of the disciplines use it as such, depending on the department) but still high when compared with the number of teachers that effectively use the e-learning platform as such, that is, exploiting the existing tools like assignments, quizzes, discussion forums, chat, etc. In fact, and even if the use of the e-learning platform by the teachers slightly increased during the three years, in the end the level of usage was still between 10 and 25%. There is some unbalance between departments in the same school, Computer Science and IT related departments have a higher adoption ratio, while in other departments the use of the platform is hardly relevant with values from 2 to 6%. Some reported contributing factors for this low level of usage were the lack of time to learn how to use the platform, operational difficulties and lack of knowledge of the platform potential.

3. INTERVENTION

The next two steps in the research process were the following:

- Proposal of Performance Model - As a result of the above sub-steps in the intervention stage a performance model was proposed to address deficiencies identified in the previous substep. This model proposes:
 - In terms of management, political and strategic decisions (see details on section 3.1).
 - In terms of teachers, actions such as training/ dissemination, coaching and persuasion (see details on section 3.2).
 - At the technological level customization, improved usability and automation tools (see details on section 3.3).
- Model Implementation - This step corresponds to the performance in the field by applying the proposals set out above.

The purpose of management intervention is to assure the creation of the necessary institutional conditions for the effective adoption of technology in teaching. This leads to the systemization of use, contributing to the general improvement of results at a teaching/learning level. The purpose of the intervention at pedagogical level is to create the necessary conditions to help teachers perform their tasks, with the e-learning platform, subsequently improving those tasks. Finally, the technologic intervention is the ground base for the creation of modules and tools that both students and teachers can use to have a friendlier and more intuitive platform.

3.1 Management Intervention

The intervention at the management level involves political decisions in order to regulate and organize the institution so that the intervention has an entire campus scale, involving the largest majority of students and teachers sharing best practice so that large gains are achieved in each discipline's success rate. The ultimate goal is then to raise the learning technology usage to a level that enables the improvement of the quality of the organization in the teaching/learning processes. But, at this level, the researcher's role can only be to persuade the governing body to adopt its proposals.

- **G1 proposal:** Directors and managers should play an important role in spreading the adoption of technology usage in the teaching/learning process. The organization's mission statement should clearly include the use of technology in the teaching/learning processes and set its goals:
 - Promoting the participation of primary stakeholders (teachers and students);
 - Raising their interest in the adoption of learning technologies.

- **G2 proposal:** There must be a clear leadership for a fully efficient technology adoption. The appointed leader should be responsible for strategy formulation and plan implementation:
 - Defining a 3-5 years strategy plan including historical data, trends and projection analysis;
 - Assessing the effectiveness and efficiency of resources (technology and human) to answer students and teacher's needs;
 - Designing operational plans and regular activity reports with a clear identification of the strengths and weaknesses to improve the quality of service;
 - Providing support to the stakeholders and ensuring the availability of resources;
 - Verifying measures taken to ensure data integrity.
- **G3 proposal:** The use of the e-learning platform by all curricular units (CUs) should be mandatory.
 - Requesting the mandatory use of the platform so that teachers may benefit from it (by increased use of the embedded learning tools) and students have the opportunity to access more diversified sources of content and communication with colleagues and teachers. This way CUs can become more interactive experiences.
- **G4 proposal:** Incentives should be provided to encourage teachers to fully use the available platform.
 - Promoting the report and sharing of best-practice.
- **G5 proposal:** The adoption of the technology should be frequently monitored. At a teaching/learning level the monitoring and evaluation of the adoption of the technology should be performed at an external and internal level. This process involves:
 - Performing periodic evaluations along with process and validating results in order to measure the attainment of goals and the progress of the strategy plan;
- **G6 proposal:** Curricular unit planning should describe the use of learning technologies:
 - Planning in a clear and concise way;
 - Providing suitable technology and tools;
 - Including frequent interaction of students between themselves and with teachers;
 - Accommodating different learning styles;
 - Allowing students to have unrestricted access.

3.2 Pedagogical Intervention

This set of proposals take on the intervention at the pedagogical level, focusing on the teacher's role and improving their pedagogical performance through the use of the e-learning platform, through training assessment.

- **P1 proposal:** Promote the use of e-learning technologies as a means of communication between teachers:
 - Exchanging information and best-practice between different UCs through synchronous and asynchronous tools embedded in the e-learning platform could represent substantial improvements of the pedagogical practice.
- **P2 proposal:** Promote the use of technologies as a means of communication between students and also between students and teachers:
 - Using existing communication tools embedded in the e-learning platform should be promoted among students once it will actively facilitate relations between them and also students with the teachers. As a result a more close and interactive guidance with optimal learning experience will be achieved.
- **P3 proposal:** Providing technical support to platform users.
 - Compiling teachers and students issues and providing adequate answers and solutions (for instance as Frequently Asked Questions - FAQs), easily accessible on the platform in order to help other users with the same or similar questions.
- **P4 proposal:** Providing pedagogic support on the e-learning platform usage.
 - Making tutorials and guides available to help teachers organize and present information using the best pedagogic practices so optimal quality information is provided to students.

- **P5 proposal:** Provide teachers training support in order to help them use the platform.
 - Providing continuous training to teachers in order to take full advantage of the platform potential.

3.3 Technological Intervention

The proposal at technology level embraces the personalization, usability and customization of the platform features and tools to the needs and abilities of the users. This implies the design and development of applications (plug-ins) to be integrated in the platform so that it is upgraded into a user-friendly tool for teachers and students, raising the user experience for them.

- **T1 proposal:** Summary plug-in
 - Keeping record of each lesson's contents is a teacher common task, and it could be beneficial if students could access that record directly from the e-learning platform.
- **T2 proposal:** Collaboration plug-in
 - Sharing files and information help the cooperation between workgroup members. Shared edition, versioning and other tools add value to the platform and improve student-student, teacher-student and teacher-teacher collaboration.
- **T3 proposal:** Integrated social networking.
 - Developing modules based on social networks like wikis and chats is a way of both promoting the platform usage and adding to the information availability.
- **T4 proposal:** Overall improvements.
 - Improving system security and stability, infrastructure upgrading, integrating with other tools and reinforcing tech support.

4. CONCLUSIONS

This study has proven that, in spite of all the advantages of using e-learning platforms we are still a long way from taking full advantage of them. We have compiled a set of carefully selected proposals that aim to make the user experience uniform throughout the whole institution and add value to the platform and its tools but also easing teachers' work with it.

By following these rules the target institution is setting a path towards excellence, keeping a bond with its students and adding value to its work, setting the foundations to a promising future where it can be a reference to others.

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