

VIRTUAL LEADERSHIP IN INTERCONTINENTAL PROJECTS: A CASE STUDY OF THE UNIVERSITY OF SANTIAGO LMS PLATFORM AS AN EDUCATIONAL STRATEGY

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Abstract.

The implementation of a *Learning Management System* (LMS) platform as a support to the course units of the degrees held at the University of Santiago (US), in Cape Verde, acts both as a project and an intercontinental challenge of educational and pedagogical exploration resources. At the same time it is an enhancer and bounding element of the education in an insular country formed by ten volcanic islands in the central region of the Atlantic Ocean, 570 kilometers from the western African coast. Due to the geographical dispersion of students, teachers and skilled technicians, distance teaching plays a major role in training, preparing an updating new professionals in different and diverse fields offered by the US.

The implementation of an LMS platform project, which began in 2017 settles in a protocol of cooperation between two higher education institutions: the Polytechnic Institute of Santarém (IPSantarém) in Portugal and the University of Santiago located in the Santiago Island in Cape Verde. The project consists on development and personalization of a LMS platform to support teaching (degrees and masters) in *e-Learning* and *blended-Learning* models. The platform, a constant work in progress, is hosted on the IPSantarém server and the needed training for teachers and skilled technicians to use it correctly has been given through *blended-Learning* with face-to-face sessions in Cape Verde.

Regarding the stages of conception, implementation, operationalization and development of the US LMS platform, the priority is bringing institutions closer by fostering bonds of cooperation, a growing and consistent trust based on effective dialogue supervised by technical teams that promote the training of teachers and IT staff by exploring *e-Learning* and *blended-Learning* environments present in the platform. This virtual leadership strategy is based on the 3Cs rule (*Communication, Confidence and Coordination*), Samartinho *et al.* (2014). It leads to a strategic synergy between two institutions where language and cultural bonds between the two peoples are clear.

To enhance success the project adopts a model based on the role of the virtual leader (e-Leader) and his virtual work teams using specific IT tools. This model called “*Model for the perception of the specific e-leadership skills and features in learning management systems environments*” was suggested by Samartinho (2014) for global projects with characteristics and technical constrains identical to the ones here presented.

For a better understanding of the project, a timeline of its development is presented (June 2017 - May 2019). Furthermore, a summary of the failures detected as well of the solutions found will be mentioned.

The US LMS platform is an example of a successful project regarding implementation, development, training and spreading. It is on an assessment/development stage to ensure all the future training needs in the US degrees and for it to succeed the adopted model will be crucial. This project is also much benefited from the great commitment of all parts involved.

The model used in this project is now expected to be adopted in future projects involving institutions from Africa, America and Asia where Portuguese is an official language.

Keywords: intercontinental; e-Learning; blended-Learning, Leadership; Learning Management Systems.

INTRODUCTION

The current study presents the process of implementation of a *Learning Management System* (LMS) platform as a support to the course units of the degrees held at the University of Santiago (US), in Cape Verde. This project assumes itself as an intercontinental challenge since it explores both educational and pedagogical resources, being also an enhancer and bonding element of education in an insular country formed by ten volcanic islands in the central region of the Atlantic Ocean in Africa.

This article is divided in four parts. Each content is briefly presented below and will be later described in detail.

The first part emphasizes the project, from its genesis to the relevance of its existence. It also portrays its objective, the entities and elements involved and it ends with the creation of a protocol between the institutions involved. The second part presents the strategy for the development and dissemination of the platform as well as the good practice model, both associated with the concept of virtual leadership in LMS environments. The third part presents the project timeline up to the present date. For a better understanding, print screens of the platforms involved were included (e.raízes.redes, e-Learning platform of IPSantarém and LMS platform of the US). As an epilogue, the fourth part presents the conclusions and highlights the aspects related to good practices, which we believe have contributed to the success of the project.

1. THE PROJECT

The implementation project of the University of Santiago (US) LMS platform began in June 2017. As this university includes a big number of degrees with students from a wide variety of islands, the need to enhance the exploration of a platform that could help and complement the students' academic study became clear very soon. Although the US has its own website with information available to the entire Cape Verdean community, it lacked a platform that could support teaching models in particular *e-Learning* and *blended-Learning*. These models foster the bond and involvement between all the participants in the teaching process: students, teachers, university and community.

Having this in mind, in the summer of 2017 the US promoted some training in *e-Learning* based on the LMS platform for its teachers and technicians. This training took place in Campus de Bolanha, Assomada in the Santiago Island and was carried out from the Polytechnic Institute of Santarém (IPSantarém). This led to the beginning of a set of synergies between the US and IPSantarém and that was the first step towards cooperation and collaboration between the two institutions.

At the end of this training the US showed its European partners the will to deepen cooperation initiated through the signing of a protocol between the IPSantarém and the US. This protocol not only considers cooperation between the teachers, other staff and students from both institutions, but also shows the intention and commitment in developing the LMS platform and in improving the technical and training aspects needed to its implementation and operation.

The project consisted in the development and personalization of an LMS platform to support teaching (degrees and masters) in *e-learning* and *blended-learning* models. The platform, in constant development, is hosted on the IPSantarém server and the needed training for teachers and skilled technicians to use it correctly has been given through *blended-learning* with face-to-face sessions in Cape Verde.

Being a platform developed from Portugal it is necessary to use project management and project control models that are compatible with virtual environments.

Having an intercontinental project related to teaching led to the development of a set of educational and pedagogical resources. To support this project a strategy of development based on the *3Cs Rule* (*Communication, Confidence and Coordination*), Samartinho et al. (2014) was used and the "*Model for the perception of the specific e-leadership skills and features in learning management systems environments*" Samartinho et al. (2015) was adopted.

2. STRATEGY AND MODEL

This theme is subdivided into two topics: in the first we present the strategy used to ensure a successful development and in the second we discuss the model of competence and good practice.

2.1 STRATEGY

Regarding the stages of conception, implementation, operationalization and development of the US LMS platform, the priority was bringing institutions closer by fostering bonds of cooperation, a growing and consistent trust based on effective dialogue supervised by technical teams that promote the training of teachers and IT staff by exploring e-Learning and blended-Learning environments present in the platform. This virtual leadership strategy was based on the *3Cs Rule (Communication, Confidence and Coordination)*, Samartinho *et al.* (2014) in which “*The e-Leader must always keep in mind that Communication must be clear and understood by everybody, in real time, in virtual collaborative environments; Confidence, apart from true, must be built and cultivated; and Coordination must be effective, allied to healthy and motivating relationships with the e-Leader making his presence felt twenty-four-seven*”.

This approach leads to a strategic synergy between two institutions where language and cultural bonds are clear. The 3Cs rule is implicit in the *Good Practices in Virtual Leadership Model* (Figure 1) adopted in the LMS platform development strategy and was directed to the following areas: operational coordination; training/education; architecture and technological infrastructure; and globally, in organizational change projects (e.g. sharing of collaborative virtual environments and horizontal leadership).

<i>Areas</i>	<i>COMPETE E-LEADER</i>	<i>Sub areas of intervention (Good practices guide)</i>
Operational coordination		Control and Management
		Control
		Skills
		Personal abilities
		Leadership style
Training/Education		Evolution/change
		Training and Education
		Evaluation
		Building trust
		Performance management
		Multicultural environment
		Multifunctional teams relationship
Architecture and Technological Infrastructures		Motivation
		Evolution
		Technology
Collaborative Virtual Environments <i>versus</i> Horizontal leadership		Control and Virtual Environment
		Complexity/Evolution/Change
		Global Environment
		Virtual Environment
		Organizational change

Figure 1. **Good Practices in Virtual Leadership – The e-3Cs Rule (Communication, Confidence and Coordination)** adapted from Samartinho *et al.* (2014)

2.2 MODEL

In order to boost success a model based on the virtual leader (*e-Leader*) and his work teams (*e-Teams*) with the use of specific computer was adopted. This model was presented by Samartinho (2014) and Samartinho, *et al.* (2015) and is aimed at projects with identical conditions and technical characteristics to those now in place.

The model, Figure 2, is based on the e-Leadership and its triangular representation paradigm, which reflects the relationship between the *e-Leader*, *e-Teams* and information and communication technologies, implanted in virtual collaborative environments. In the middle is the virtual collaborative environment expressed in the integration of tools.

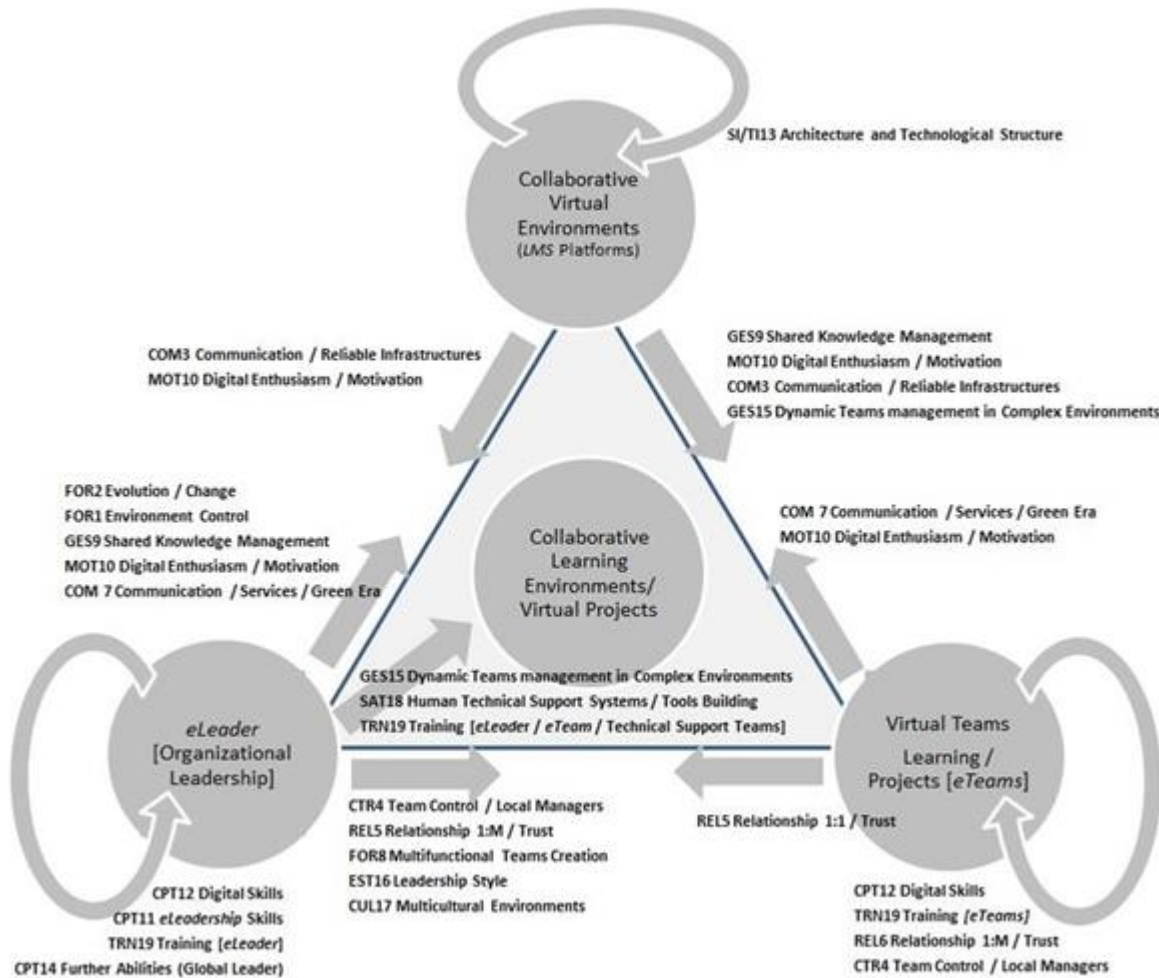


Figure 2. Model for Specific Skills and Characteristics in *e-Leadership* adapted from Samartinho *et al.* (2015)

The Model is intended to help understanding the surrounding environment and of the entire mechanism of functioning. It also intends to be a guideline in order to achieve successful leadership in this type of environments.

3. IMPLEMENTATION OF THE PROJECT

In December 2016, in informal meetings between US and IPSantarém, a process of preparation began. This would lead to the implementation of a project whose main goals are: promotion, cooperation, implementation and development of a Learning Management System (LMS) platform for the US. Due to the archipelago characteristics, it would give the US the opportunity to develop its degrees and training in the *e-Learning* or *blended-Learning* model.

In June 2017, a pilot trial was carried out in which a first training course was held. This action (Table 1) aimed to present the potential of the LMS platforms as enablers of distance learning. A group of US teachers and skilled technicians was selected for this training and all support was provided by US Rectory. The training was held from the e.raízes.redes platform, the e-Learning platform from IPSantarém (Figure 3).

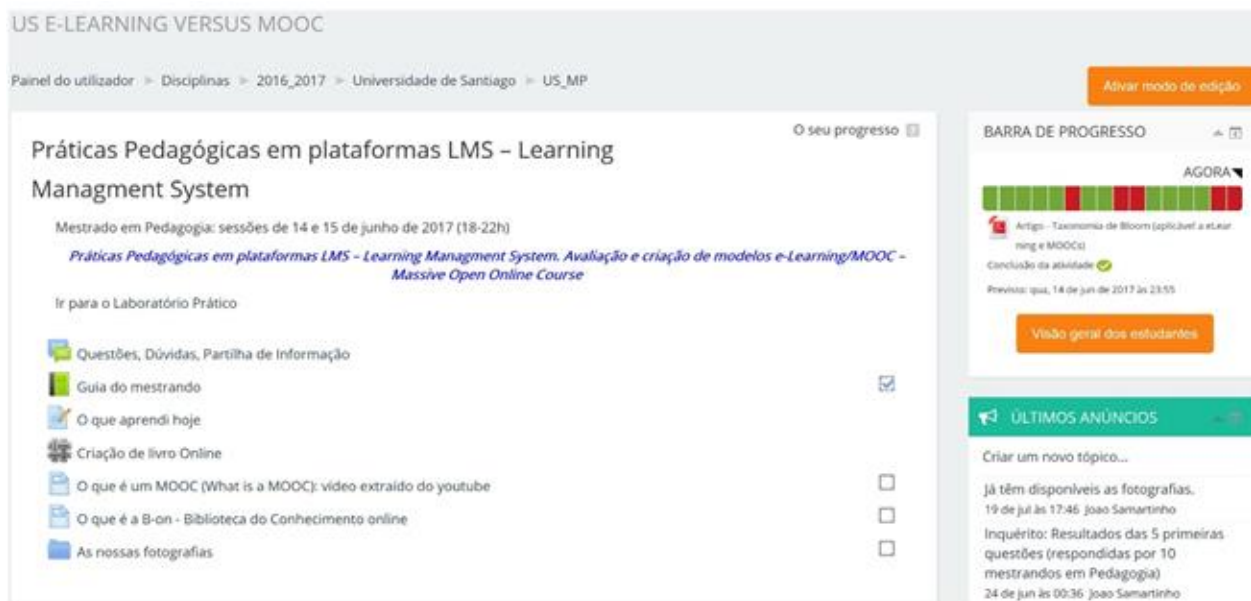


Figure 3. Print screen of the training held from e.raízes.redes available on <https://elearning.ipsantarem.pt/>

The success of this action dictated, also in June 2017, the preparation and signing of the cooperation protocol between the US and the IPSantarém. This proposal clearly and implicitly considers the importance of cooperation between the teaching and student staff of these higher education institutions in terms of teaching, project development and research. In September, the design and development of the US LMS platform (Figure 4) was carried out, which was subsequently tested and validated in February 2018 through a visit to Cape Verde by an IPSantarém professor involved in its design and development.

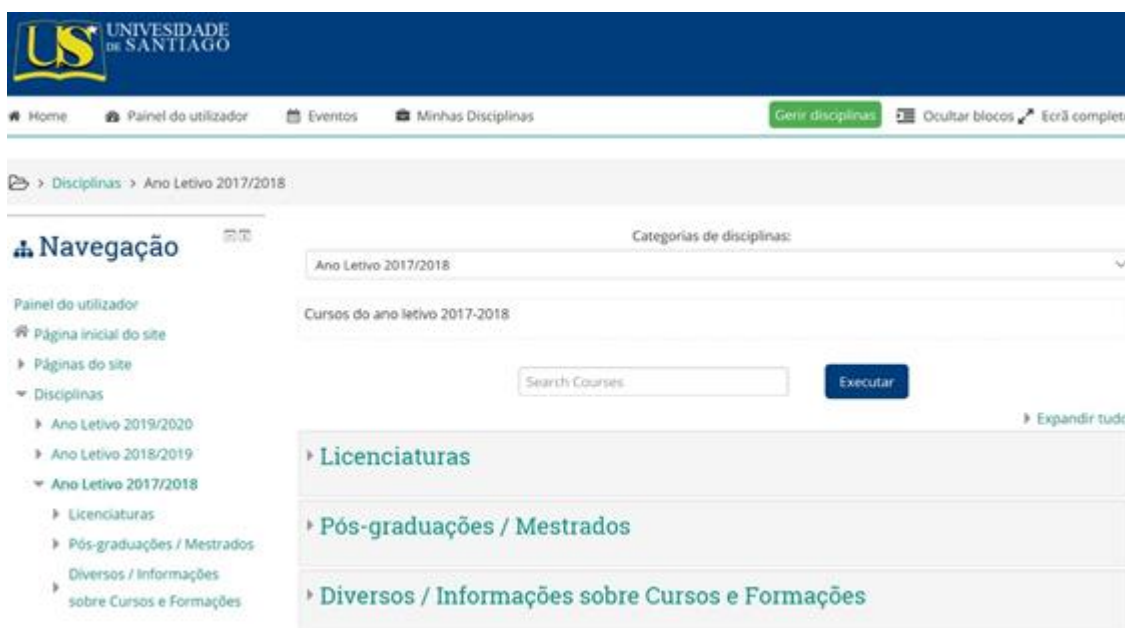


Figure 4. Print screen of the training Santiago University Platform <http://mcttc.es.ipsantarem.pt/usantiago/>

During this visit, initial training was given to skilled technicians and to the first group of US teachers. This group of US teachers attended the master's degree in Pedagogy and the course unit "Pedagogical Practices in LMS Platforms" had 24 hours of classroom teaching and 16 hours of non-presential teaching that includes the module of evaluation and presentation of works by video conference.

In November 2018, academic year 2018/2019 was prepared, which, in addition to the course units present in the master's degree in Pedagogy included others. In February 2019, beginning of the second semester, the project was more ambitious and, based on the strong involvement of the Rector, which convened a large number of teachers from the US, an extended training was carried out for 2 weeks. This training included a module of creation and management of units in LMS platform and another module involving the creation and exploration of educational resources in LMS environments. As a final work, each teacher was asked to develop and present a unit to be taught by himself in the second semester. This challenge allowed all the participants to prepare at least one unit.

The success of the training and strategy used can be expressed in the broad way in which the units of US Courses were created and explored in the LMS platform in the second half of the academic year.

Table 1 -The activities of the Project within the timeframe from June 2017 to September 2019

Date	Action	Intervenients	Period/Date	Place
June 2017	Training for Teachers and IT Technicians	Trial Group: Teachers and Technicians	2 weeks	University of Santiago (US)
June 2017	Signing of the Cooperation Protocol US / IPSantarém	US / IPSantarém	5 years	US e IPSantarém
September 2017	Development of the US LMS platform	Technician / IPSantarém Professor	3 months	IPSantarém
February 2018	US LMS platform tests	US Technical Team / IPSantarém	1 week	US (Assomada)
February 2018	Training for teachers and technicians	US Teachers and Technicians	2 weeks	US (Assomada)
February 2018	First unit taught to the Master's Degree students of Pedagogy in the US	Students of the Pedagogy Master's Degree	2 weeks	US (Assomada) + e-Learning sessions from Portugal
November 2018	Units taught to the Master's Degree students of Pedagogy in the US	Students of the Pedagogy Master's Degree	2 weeks	US (Assomada) + e-Learning sessions from Portugal
February 2019	Training in e-Learning models in LMS platforms	US Teachers	1 week	US (Assomada)
February 2019	Training in Teaching Resources in LMS platforms	US Teachers	2 weeks	US (Assomada) + e-Learning sessions from Portugal
February 2019	Creation of units in US Degrees and Masters Courses platform	US Students	2 nd semester	US (Assomada)
May 2019	Addenda to the US / IPSantarém Cooperation Protocol	US / IPSantarém		US / IPSantarém
September 2019	1st Edition of the US <i>Roteiros Mundi</i>	US Teachers and Students	09-18 September 2019	IPSantarém
September 2019	Signing the Addenda to the US / IPSantarém Cooperation Protocol	US / IPSantarém	September 18 th 2019	iSpot of the IPSantarém
September 2019	Preparing the platform for the academic year of 2019/2020	US		US (Assomada)

Although the success, if measured in number of units created in the US, is remarkable, it will still be necessary to ensure the development of the project. On the one hand, to ensure the full operability of the US LMS platform and, on the other hand, to meet the specific needs of the US teachers regarding the qualification

level, enabling the courses to have a higher number of skilled professors familiar with distance learning models.

These needs led both institutions to meet again in May 2019 in order to include aspects not considered in the initial protocol. The meetings, held at the Bolanha Campus in Assomada, resulted in two Addenda that filled in the existing gaps.

The Addenda were signed in September 2019 during the visit of a group of 9 master's students and 5 US teachers to IPSantarém, which was integrated in the 1st Edition of the US *Roteiros Mundi* program.

4. CONCLUSIONS

The US LMS platform is an example of a successful project regarding implementation, development, training and dissemination. It is in the evaluation/development phase in order to ensure future training needs in US Courses. For the success of the project, the model of skills and good practices in e-Leadership will be decisive. All the involvement and commitment has been possible thanks to the strategy used based on the establishment of strong ties of cooperation and trust complemented by effective communication and strong and shared coordination.

As a result, and given the clear increase in the participation of US teachers and their students, we consider that the project has been a success. This is due not only to the platform but also to the human resources involved. We would like to highlight:

- the importance of the involvement and commitment of top management, the work and involvement of the Rectory having promoted a great boost to the project, particularly from its second phase (beginning of the 2nd semester 2018/2019);
- the motivation and spirit of trust created between the trainers and teachers of the US. This motivation and trust between the working group was based throughout the project, reaching high levels and ensuring good performance and desirable results for the project;
- the shared coordination that required and enhanced the involvement of the entire group in the desirable and necessary solutions for the project;
- the availability of all and for all, with particular focus on the speed of responses to questions raised (inside or outside training sessions) as well as on the attention, appreciation and welcome to all the interventions proposed by all the participants.

In a future perspective, the project should be consolidated to grow and establish itself. Only after the completion of a complete study cycle will we be able to be more critical in measuring success.

It is hoped that the model developed in this project may serve as a model of good practice in other projects between the IPSantarém and Universities of Portuguese-speaking countries (scattered across the African, American and Asian continents).

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