E-Learning in the Process of Classroom Teaching and Learning: A Case Study at Catholic University of Mozambique

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Abstract

This article aims to assess the level of implementation of e-learning in the process of classroom teaching and learning in Faculties and Extensions of the Catholic University of Mozambique (UCM). The focus is: i) identify the Basic Units (UBs) integrating e-learning; ii) identify opportunities and limitations of integration; iii) evaluate the organization and implementation of e-learning. The study took a mixed approach of data collection and analysis that is structured in two parts: i) qualitative, based on a process of analysis of documents; ii) quantitative, based on an online questionnaire aiming at listening to the experiences of e-learning within the UBs. The study results show that the majority (seven) of the twelve UBs teach e-learning courses, however it is only at the master and doctorate level and solely one at the undergraduate level. E-learning is mainly implemented as a support for face-to-face teaching where digital platforms have repository function and submission of works. At the organizational and cultural level there is still no institutionalization and an accepted view on e-learning implementation. Most UBs lack confidence as a cause of non-implementation of e-learning courses in general or at the undergraduate level.

Keywords: e-learning; higher education; teaching and learning process; sustainability

1.Introduction

Historically, e-learning has developed in the context of training in companies for two fundamental reasons of an economic nature: the elimination of transfers and, the possibility of generating an economy of scale with the production of content, the Learning Objects (LO) (Ugolini, 2009).

In this business context, the contents are considered central elements, in contrast to university e-learning, where tutors assume a greater role of guiding or facilitating students' learning due to the fact that this model is more student-centered.

Since the 2000s, Europe has been investing sBUstantially in its public and private resources, especially with regard to initiatives related to the introduction of e-learning in different situations of educational scope (Trentin, 2007).

The starting point that gave rise to the large investment of resources mentioned above was the "e-Learning Action Plan: thinking about the future of education", which was adopted by the European Commission on 24 May 2000, following the conclusions of the European Council of Lisbon and its main objective is the effective integration of Information and Communication Technologies (ICT) in European education and training systems (EUROPEAN COMMISSION, 2013). This initiative had the following objectives: 1) To implement a quality digital infrastructure at affordable costs; 2) Intensify the training of a "digital culture" for the pedagogical use of technology; 3) Develop advanced content and services and, finally, 4) Reinforce cooperation between all players in the sector: universities, schools, companies.

However, in view of the efforts mentioned above, there was no real and definitive take-off regarding the educational use of ICT. Illustrations from some recently published studies such as those by D'Amario (2014) and Monteiro (2016) showed resistance to change in universities, which are not prepared for an effective adoption of e-learning, in the various dimensions it contemplates.

In his research, Walter D'Amario (2014) showed that of the 49 Italian universities, in a universe of 77, 60% declared that they did not offer e-learning training courses. The main causes that the author presents are: the lack of interest by the lecturers (45% of the universities), the lack of financial resources (40%), the lack of incentives on the part of the ministry (40%) and final, the level of distrust in e-learning (38%).

The African reality is no different from that of Europe. A study conducted in 2010 in 25 African countries indicated that the majority of African teachers and students have limited access or reduced benefits in the use of ICT (Unwin et al., 2010). According to the authors, among African educators there is limited interest in e-learning, also conditioned by the difficulties of accessing ICT, limitation of the internet band, access to electricity and the poor knowledge of digital platforms.

In the case of Mozambique, according to António and Coutinho (2012), the integration of ICT in Mozambican higher education is still an ongoing initiative, and they present as an example the "Education Technology Plan" (2011) of the Ministry of Education. The plan's objective was to include ICT in the educational process in secondary school, having as main focuses the evolution of the teaching model through the introduction of ICT and the new student-centered learning

paradigm, but in reality the Ministry's greatest attention was directed towards infrastructure issues, with particular emphasis on the MoRENet initiative.

Catholic University of Mozambique

The Catholic University of Mozambique (UCM) is the largest private higher institution in the country. it was officially founded in 1995 through Decree nº 43/95 of 14 September, with its headquarters in the city of Beira, in the province of Sofala (Catholic University of Mozambique, 2019).

The first experience of implementing e-learning in UCM courses took place in 2003, at the Faculty of Tourism and Information Management in Pemba inserted in the African Virtual Initiatives (AVOIR) project (Catholic University of Mozambique, 2011). However, after that first experience, for about a decade, the implementation of e-learning at UCM had no evident impact, having been limited to the individual experiences of some teachers.

From 2011, at the Faculty of Education and Communication (FEC) and in collaboration with the Portuguese Catholic University (UCP), doctoral courses were opened in the semi-face-to-face modality, which included two weeks of face-to-face training at the beginning of each semester. and online training between face-to-face sessions (Lagarto, Baptista, & Alves, 2013).

The opening of the courses mentioned above did not have a specific strategic plan for the implementation of e-learning. However, in its general strategic plan 2018-2022, UCM proposed to expand its offer of online education, gradually increasing the number of subjects on offer in this modality. To achieve this purpose, UCM will invest in training teachers and students in the pedagogical and didactic use of Educational Technologies, in particular the Moodle platform (Catholic University of Mozambique, 2018a).

In 2018, in each Basic Unit (UB), the post of Educational Technologies Coordinator (TE) was created with the function of training and accompanying teachers in the creation and organization of courses and providing support to students.

At the same time, in its Scientific Policy plan, UCM requires that teachers who will teach disciplines at the Master's and Doctoral level must have training in the use of the Moodle platform and must also provide educational materials and bibliographic resources on the same platform (Universidade Católica de Moçambique, 2018b).

From the academic year of 2019 onwards, all Master's and Doctorate courses will be taught in semi-classroom mode, with a study workload of 64 hours per subject, with 30 face-to-face hours and 34 online hours on the Moodle Platform (Catholic University of Mozambique, 2018b) .

Two surveys recently carried out at UCM by Mura and Rhongo (2018), relating to students from the first doctoral courses at the Faculty of Education and Communication (FEC) and Talaquichande (2017) on the use of the Moodle platform at the Faculty of Economics and Management (FEG), showed that the use of this platform by teachers is, in general, very low. Talaquichande (2017) shows that only 43% of teachers (from FEG) use Moodle, but few if any use the platform at a weekly or annual frequency, and no teacher uses it with a frequency equal to "once a week" or "every day".

Thus, the present study aims to find answers to the following questions: 1) What are the Basic Units that integrate e-learning in the On-campus Teaching model?; 2) What are the opportunities and limitations of integrating e-learning in the On-campus Teaching model? ?; 3) How is the implementation of e-learning organized in the face-to-face teaching model?

2. Theoretical context

2.1 E-learning

Marc Rosenberg, in his book "Beyond e-learning" (2006), mentions 9 myths about e-learning and the first that he presents is that "everyone understands what e-learning is" (p. 20). For the author there is great confusion about the word and one of the reasons is the continuous misunderstanding "between training (the means) and learning (the ends)" (p.21).

Similarly, Bowles (2004, cit. In Rao, 2011) argues that the definition of e-learning tends to be complex, an enigma that is far from clear, and in this regard, Freisen (2009, cit. In Dias et al., 2015) and Sangrà, Vlachopoulos and Cabrera (2012) argue that the definition varies according to the specific purposes of the different groups of researchers and time periods.

Eliot Masie (1999) defines the word e-learning as a "fantastic expression" because it links technology with teaching experience, but adds that the use of the prefix "e-"created a certain ambiguity due to the close connection between the prefix "e-" combined with commercial issues and financial speculation:
 " business is adding the letter 'e': e-mail, e-commerce".

Additionally, Sangrà, Vlachopoulos and Cabrera (2012) identified 4 major categories to group the different definitions of e-learning, as follows:

1. Technology-orientated - the technological aspects of e-learning are emphasized;
2. Oriented to the Access System - the focus is on the accessibility of resources;
3. Communication-oriented - considers e-learning as a communication, interaction and collaboration tool;
4. Oriented towards the Educational Paradigm - considers e-learning as a new way of learning or as an improvement on an existing educational paradigm.

In this study, we chose the definition given the last category mentioned above because it is a clearer and more appropriate operational definition for the context of this work. Thus, the "e-Learning Action Plan" (EUROPEAN COMMISSION, 2013) defines e-learning as the use of new multimedia and internet technologies to improve the quality of learning, thus facilitating access to resources, services, sharing and collaboration of information at a distance.

The existence of different perspectives regarding the concept of e-learning are not surprising considering that there is also differentiation with regard to e-learning implementation models (Ugolini, 2009, Monteiro, 2016). In the same line of thought, Bates (2001) describes the different models of implementations as the idea of a continuous transversality of e-learning (e-learning Continuum), as shown in Figure 1.

Figure 1: Concept of transversality of e-Learning (eLearning Continuum)
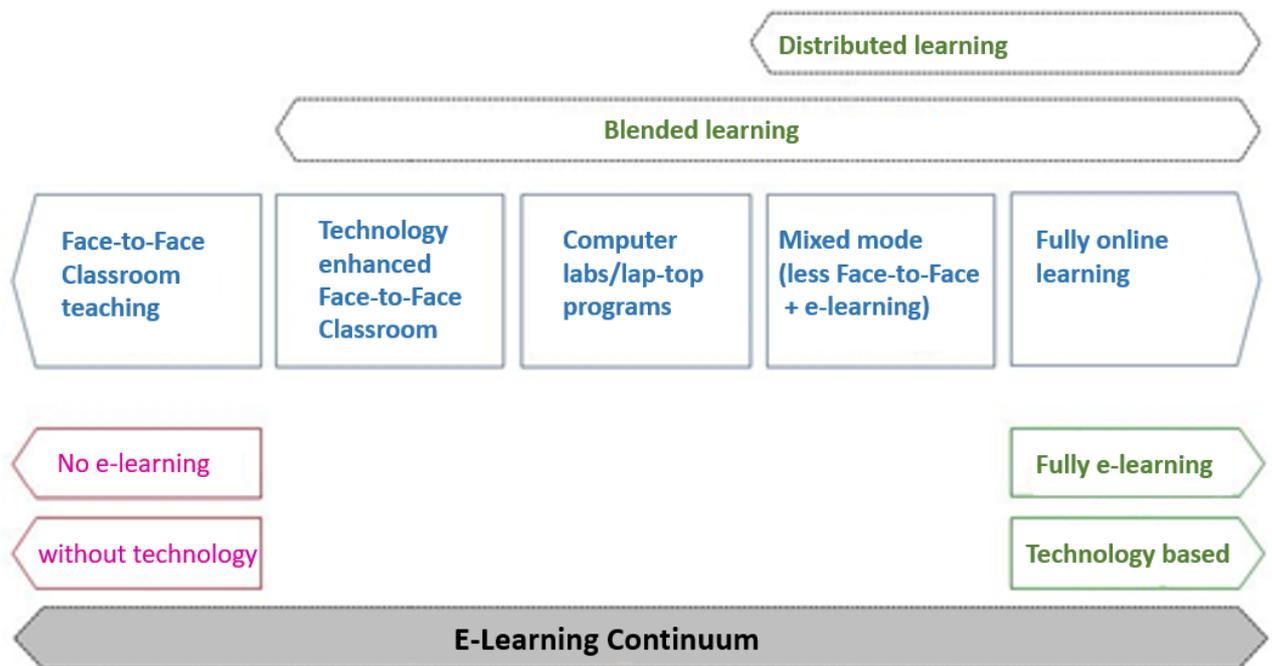
Source: Monteiro (2016, p.48) adapted from Bates (2001)

At one end of the continuum is "total classroom teaching", that is, face-to-face classroom teaching, and at the other, "fully online teaching", which is fully integrated e-learning. Between these opposites, Bates (2001) considered a series of mixed learning approaches that are useful for understanding what e-learning has to offer.

In Bates' continuum (2001), the second modality uses e-learning as a support for classroom teaching. In this situation and according to Carvalho (2008), a sharing space with a repository, (usually an LMS (Learning Management Systems)), is often used to access content and supporting documents, information, examples of solved exercises, self-assessment tests and to contact the teacher.

In the third modality, students enter the classroom for face-to-face teaching and then move to the computer lab, where in small groups they research content and return to the classroom room with the teacher, to share experiences, debate and build knowledge (Ramos, Perassi, Sousa, & Alves , 2013).

Bates (2001), describes the fourth mixed education modality (BlendedLearning), as a reduction of face to face contact (f2f) with the teacher and an increase in online activities, but for Galiani (2010, cit. In D'Amario, 2014) this should be combined with an integrated and systematic use of ICT in educational and training actions. These should be an essential part of the course program.

The last modality is distance learning and is totally online. Here, the student leaves the classroom and has the possibility of studying whenever and wherever he wants.

2.2 Sustainability of e-learning

In addition to Monteiro (2016) by D'Amario (2014), other studies such as those by Trentin (2007) and Schönwald (2003), show that there are still rare situations in which the right conditions have been created for e-learning survival both in terms of methodological innovation and active balance between costs and investment returns (tangible and intangible).

According to Monteiro (2016) for a full adoption of e-learning, a process of planning and organizational change is required, and McPherson (2007) identifies four critical factors: existence of an institutional strategic plan; clarity of the necessary resources; observance of organizational culture, and, human resources training.

Guglielmo Trentin, in his book "la sostenibilità didattico – formative dell'elearning" (2008), identifies 8 dimensions for a sustainable implementation of e-learning as in Figure 2

Figure 2: Dimensions for the implementation of sustainable e-learning
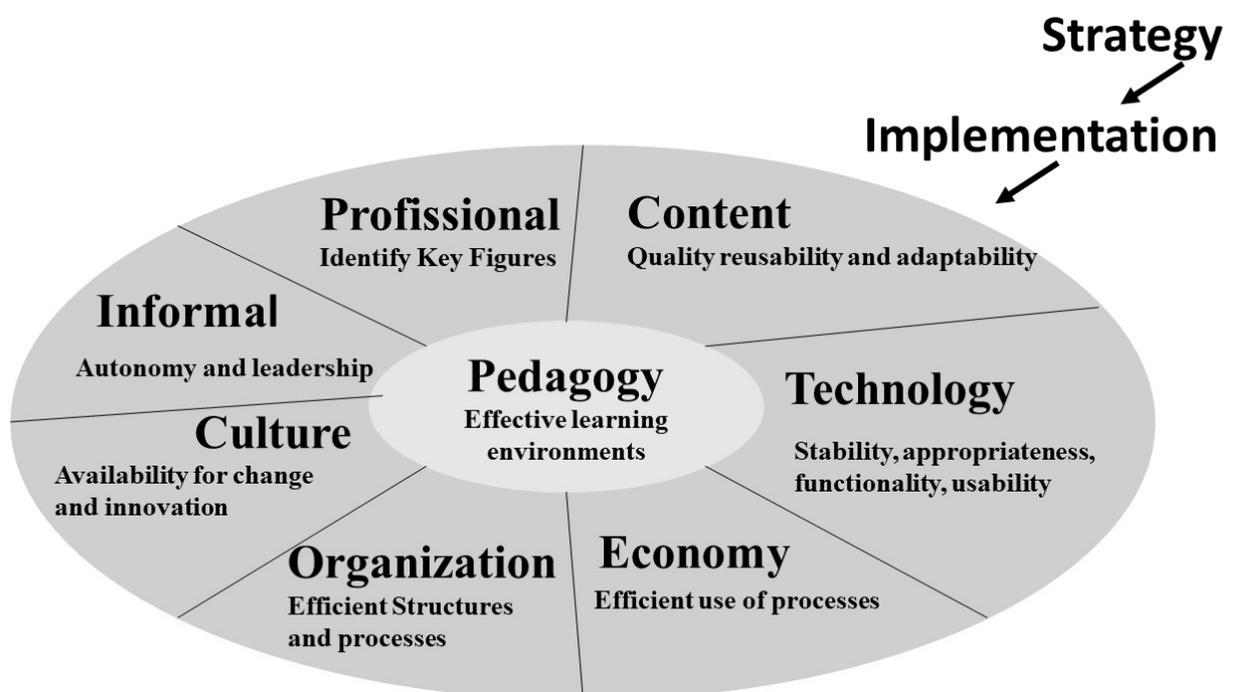
Source: Trentin (2008, p.28)

According to Schönwald (2003), the institution must initially define its strategic objective, answer a crucial question "For what purpose is it intended to use e-learning?" (Collis, 2002, cit. In Schönwald, 2003) and then make an analysis of the necessary changes in the organization.

The dimensions are closely related and help in formulating the questions to be analyzed in order to implement the changes. In summary we can describe them as:

Pedagogical
This dimension refers to the quality of university education, with a focus on learning. It focuses on added value and the pedagogical potential introduced with e-learning.

Economy
This refers to all aspects related to the optimization of the resources used, from implementation costs to exercise costs. It comprises the costs of technological and support infrastructure.

Technology
This concerns the functionality and stability of an adequate technological infrastructure, capable of adapting to the needs of the context and the user. Necessary characteristics are a high degree of ease of use and usability. Technology is a critical dimension, it can absorb an excessive amount of resources that it would be advisable to use to boost human resources (teachers, tutors, supervisors, etc.).

Organization
This relates to the creation of organizational conditions (adaptation and consolidation of structures and processes) for a real integration of e-learning methodologies in the organization's practices to "institutionalize" them. An e-learning initiative not integrated within the organization has little chance of surviving.

Culture
It refers to socio-cultural changes and the effects that could derive from a wide diffusion of e-learning methods, both in institutional study paths (example: at the University) and in continuous training. The key idea is to raise awareness among the various stakeholders to consider e-learning as an integrated part of professional activity.

Professional
This dimension focuses on the identification of the key figures necessary for the management, planning, development and support of e-learning, as well as training them. In this dimension, strategies for the cultural growth of teachers are placed in relation to the pedagogical use of ICT.

Informal
The informal dimension involves the processes that see the student dealing autonomously and in real time with cognitive needs, not necessarily linked to the course, but to their individual abilities in solving problematic situations with the use of ICT. But it also refers to "networked" interaction in the professional community with the aim of sharing knowledge.

Content
This aspect not only refers to the quality of the transmitted content and its implementation, but also to the combination of aspects related to the transportability, reusability and adaptability of the content to different situations and/or contexts. This dimension is strongly linked to the three other dimensions: pedagogical, technological and economic.

From the research by Schönwald (2003), Mendonça, Cassundé, Andrade and Paiva (2005), Trentin (2008) and Cascio and Battiato (2012), the indicators for each dimension were defined, which can be seen in Table 1.

Table 1: Indicators of sustainable e-learning

Dimension	Indicators
Pedagogy	• Focus of learning • Didactics • Pedagogical approaches • Educational inovations • Evaluation of quality of teaching • Teachers' competenc development • Effective virtual learning environments
Economy	• Implementation strategy • Initial investment • Medium and long-term financing • Efficient use of infra-structure • Efficient use of teachers
Tecnology	• Appropriateness • Usability • Funcionality • System stability • Technical support • Distribution
Organization	• Basic Infra-structure • Technical infra-structure • Adaptation of existing infra-structure • Adaptation of existing processes • Implementation planning • Management of interested parties (teachers, students and technicians) • Quality management • Transparency of change processes • Infra-structure efficiency • Process efficiency
Culture	• Pro-active actions to promote change • Socio-cultural changes (students, teachers and technicians) • Institucional commitment • Disponibilidade para a mudança Disponibilidade para a inovação
Profissional	• Support structure • Management, planning, activity and content development structures • Definition of key positions • Traning strategy

Informal	• Infra-structures for network interaction and knowledge sharing (blogs, wiki..)
Content	• Quality • Re-usability • Adaptability

Source: Schönwald (2003), Mendonça, Cassundé, Andrade e Paiva (2005), Trentin (2008) e Cascio e Battiato (2012)

3. Methodology

In this research, we opted for a constructivist-interpretative approach, with a mixed methodology, with the use of qualitative and quantitative methods and techniques (document analysis, questionnaire survey). This approach allowed for combining qualitative and quantitative methods to obtain data in a single study. The central premise of applying this combined methodological approach provided the study with a better understanding of the problem it was intended to solve. In addition, the combination of quantitative and qualitative methods allowed for the generalization of the results of this study. Additionally, the application of the mixed approach allowed us provide a detailed description of the studied problem and to explain the quantitative results, deepening them with the qualitative results.

Pourtois (2003, cit. In Lima, 2008) argues that the mixed methodology provides for the articulated interpretation of different points of view in order to interpret, understand and explain the complexity of the phenomenon under examination, and in choosing the methodology we considered the complexity of the context of e-learning integration as presented in the previous paragraph.

The study was conducted in the first half of 2019. For the collection of qualitative data, the study used the technique of document analysis. Thus, an analysis of UCM's governing documents was carried out, based on : the UCM Strategic Plan for 2018-2022, the UCM Scientific Policy for2018, ICT Policies 2014-2018 and the directives of the University's Rector. Statistical reports from the departments of the Central Academic Registry and IT were also consulted.

For the collection of quantitative data, a questionnaire survey was used. The questionnaire was sent to the management board of each the 12 Basic Units (BUs) of the UCM, except for the recently opened Maputo extension (in 2019) and the Institute of Distance Education for non- classroom courses. The objective of the questionnaire was to collect information, to listen to the experiences of the BUs that already implement, even partially, e-learning in face-to-face teaching and with regard to those BUs that have not yet implemented it, to try to understand from them what are the real causes of non-implementation. The questionnaire was made up of two distinct parts for the BUs that implement e-learning or not, and this separation was made right at the beginning, presenting the definition of e-learning, asking each UB to indicate if it identified itself with the same or not.

4. Presentation and Discussion of Results

This section presents and discusses the results, taking into account the research questions established for the study which are: 1) Which are the Basic Units that integrate e-learning in the On-site Teaching model?; 2) What are the opportunities and limitations of integrating e-learning

into the On-site Teaching model ?; 3) How is the implementation of e-learning organized in the face-to-face teaching model?

All 12 (twelve) Basic Units participated in the study and the sample included 2 Directors, 8 Assistant Pedagogic Directors and 2 University Assistants, the latter being chosen by the UB management.

4.1 Integration of e-learning in classroom teaching
When asked about "whether the UB teaches courses in e-learning mode", 7 Basic Units stated that they teach courses in the e-learning mode and 5 said that they do not.
The degree of use of e-learning is not the same in all BUs, on a scale of 1 to 5, where 1 is little and 5 a lot, as shown in Graph 1, and most of the 7 BUs are divided between 2 (2 BUs) and 3 (3 BUs).

Graph 1: Degree of use of e-learning in BUs.
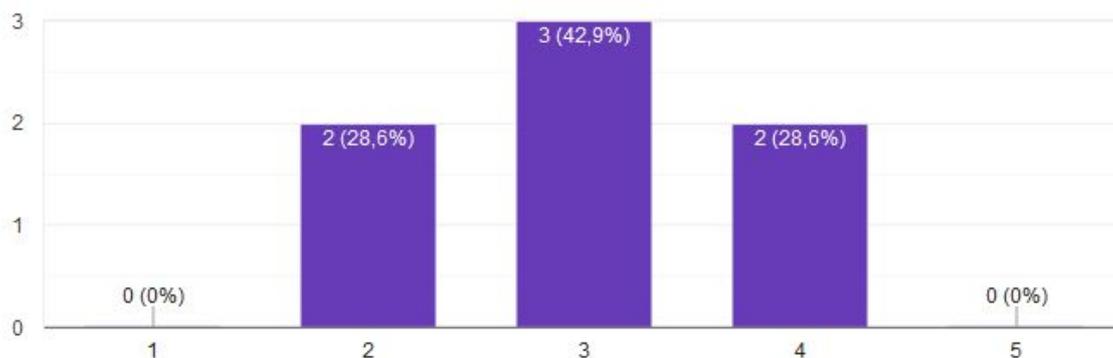
Courses administered in e-learning are at the master's level (representing 100% of the BUs that teach these courses) and the doctorate (representing 100% of the BUs that teach these courses). Only one BU teaches some courses at the level of licentiate degree in e-learning mode.

This result is in line with the UCM policy that already provides for the use of the Moodle platform for all postgraduate courses as defined in article 4 of the UCM Scientific Policy (Catholic University of Mozambique, 2018b).

For licentiate courses, it is only possible to refer to the UCM Strategic Plan 2018-2022 (Catholic University of Mozambique, 2018a) which among the strategies of the Teaching and Learning Area (EA), mentions "Expand the modality of distance and open education, both in Distance Education and BUs with the goal of "Offering and administering, in a gradual and increasing way, subjects in an online regime (e-learning) " (p. 17).

According to this documentary analysis, it is possible to state that this action stated in this plan seems to be somewhat limited since, in practice, the results of the study show that the 7 (seven) BUs that implement e-learning, 6 (six) do not do it at the licentiate level, but only at the graduate level, due to the absence of a strategy from the University itself. Table 2 clearly illustrates the reasons that led the BUs, which administer courses in the e-learning modality, to not use this modality at the licentiate level.

Table 2: Reasons for BUs not offering licentiate degrees via e-learning

Reason	Totally Agree	Partially Agree	Don't know	Disagree	Totally Disagree	Total
Lack of university strategy	1	2	3	0	0	6
Lack of technical competence	1	1	1	2	1	6
Students lack ICT competence	0	2	2	0	2	6

On the question of strategy, one of the surveyed BUs confirms its lack of clarity through the following comment "The university's policies do not yet provide for classroom courses" (UB14). Other minor and discordant reasons among the BUs are the weak technical capacity in the management of platforms and students' skills in the use of ICT.

The main reason indicated by the BUs that do not teach-learning, at any level, is the lack of confidence in the teaching methodology. One of the interviewed BUs confirms this analysis according to the following comment "For our courses, at least at the level of the licentiate degree, e-learning does not guarantee the acquisition of technical skills in the desirable way" (BU02). Table 3 shows the reasons that led the BUs to not offer courses in e-learning mode.

Table 3: Reasons for not offering courses via e-learning

Reason	Totally Agree	Agree	Don't know	Partially Disagree	Totally Disagree	Total
Lack of trust	1	3	0	0	1	5
Lack of incentives at ministerial level	1	2	1	0	1	5
Lack of financial resources	0	2	2	1	0	5
Lack of university strategy	0	2	1	2	0	5
E-earning is not na effective methodology	0	2	0	2	1	5
Lack of teacher ITC use competence	0	2	1	1	1	5
Increase in costs	0	2	1	0	2	5

The second reason presented is the lack of incentives at the level of the Ministry of Science and Technology, Higher and Technical-Professional Education but, in reality, the introduction of e-learning in Higher Education is one of the Government's objectives, set out in the " Technological Education Plan" in 2011. Financial aspects and lack of strategy are other reasons presented.

It should be noted that one of the BUs in the past offered courses in e-learning modality, but now it does not because of insufficient technological equipment, limited financial resources and lack of trained and/or competent teachers in the area of e-learning.

4.2 Opportunities and limitations of e-learning integration

There are several digital tools used in e-learning and the main one is Moodle (represented 100% in the BUs). Other tools are limited social networks (2 BUs), blogs (1 Bu) and instant messenger communication (1 BU). Moodle is used mainly as a repository and for submitting students' work, in a minor form for discussion in the forum. The functionalities are shown in Table 4.

Table 4: Percentage of the functions of Moodle used in the BUs.

Funcions	Percentage
Repository	100% (7 BUs)
Submitting work	100% (7 BUs)
Forum	57,1% (4 BUs)
Groupwork outside the classroom	28,6% (2 BUs)
Auto-evaluation tests	14,3% (1 BU)

Considering the e-learning continuum by Bates (2001) it is possible to recognize the second level of implementation, where e-learning is implemented in support of higher education.

It is observed that the main activities such as the repository and the submission of work do not require high skills in the use of computer tools. However, specific features such as the Forum and Group Work Management should show greater use, rather than reduced use, as shown in the results in Table 4.

A confirmation of the "complexity" of the use of the discussion forum on the part of the teachers, for example, is shown in the research by Mura and Rhongo (2018) that presents the number of messages per forum in the different subjects of the same PhD. The Education and Information and Communication Technologies subject has a total of 594 messages sent in the forums, but it is an exception, as others do not reach 100, with some subjects with only 10 messages in the total of the forums.

Considering that the students are the same in different subjects, the two authors justify this difference in the number of messages sent, as being related to the ability of teachers to create stimulating forums for students and in the management of response flows.

When asked about "why implement e-learning", all 7 BUs stated that they implement with the objective of improving the quality of teaching. Additionally, another 6 BUs responded that with this teaching modality it is possible to increase flexibility and facilitate the implementation of a student-centered learning model. Only 3 BUs considered the implementation of e-learning as a modality for reducing costs and to respond to the University's strategies. Table 5 shows this analysis.

Table 5: Principal positive aspects of e-learning implementation for students.

Aspect	Totally Agree	Partially Agree	Don't know	Partially disgree	Totally Disagree	Total
Organise and accompany the work done by students in virtual environments such as communities, blogs and the like.	4	2	0	1	0	7
Develops students' ability to create and publish their own work and participate in collaborative environments.	3	2	1	1	0	7
Provide students with an attractive and motivating environment to make lessons more dynamic and playful.	3	1	3	0	0	7
Facilitate the understanding of topics and content of a subject with multi-media resources such as websites, games, demonstrations and simulations.	1	2	2	2	0	7

The results also showed that the idea of e-learning, as a support tool (organizational and monitoring), deserves greater attention to its real integration as one of the priorities of the positive aspects indicated by the students. For example, 3 (three) BUs totally agreed that the implementation of e-learning offers students an attractive and motivating environment to make classes more dynamic and playful.

Another aspect that should be "highlighted" is how to "facilitate the understanding of topics and contents of a subject with multimedia resources, such as websites, games, demonstrations and simulations". For this point, 2 BUs didn't know and the same number partially disagreed .
The use of multimedia resources or games requires a "generational" step in the implementation of e-learning from a repository-type model to a model with a greater integration of ICTs idealized in the e-learning Continuum by Bates (2001).

Among the factors that have a negative impact on the successful implementation of e-learning, the BUs highlighted the weak mastery of ICT on the part of teachers, the lack of adequate IT

infrastructures in the BUs and weak interest in the use of ICT among teachers. Table 6 illustrates the description.

Table 6: Principal factors which have a negative impact on the successful implementation e-learning

Negative factors	Completely Agree	Partially Agree	Don't know	Partially Disagree Discorda	Totally Disagree
Teachers with weak mastery of ICT	5	0	0	2	0
LAck of infra-structure in the Faculty	4	0	1	1	1
Lack of teacher interest	3	1	1	1	1
Students with weak ICT competence	1	4	0	1	1
Lack of student interest	1	4	0	1	1

At the student level, there is a weak knowledge of ICT skills and a lack of interest among students. The latter should be a strength point of e-learning to offer "an attractive environment" for students. One of the causes may be the little relevance given to alternative resources such as multimedia, games, etc. that could be more attractive to students, as shown in Table 5.

4.3 Organization in the implementation of e-learning

For the BUs, the human resources involved in e-learning are almost exclusively ICT teachers and technicians, only 2 BUs involve the other employees.

The management of the e-learning implementation is done mainly at the level of BUs or at the level of the course coordinators and only 2 BUs collaborate with the central level of the university.

The involvement of ICT technicians is verified in the support to teachers. All BUs guarantee technical support: software installation, laptop maintenance, resolution of connection problems and support to access the Moodle platform. However, these aspects cannot be considered sufficient, because despite this support, BUs continue to present the problem of weak ICT mastery as the main cause of the failure of ICT implementation as shown in Table 6.

The results show that only 3 BUs offer support to teachers in the didactic and pedagogical areas and in the choice and production of material. However, only 4 (four) BUs have specific e-learning management teams. This reduced support for teachers may be the cause of the weak use of Moodle functions (shown in Table 4) and the problem of the weak ICT mastery (shown in Table 6).

It is confirmed, therefore, that for the BUs, the ICT component is quite important in terms of educational and pedagogical aspects according to the framework described by Ugolini (2009).

All 7 BUs that implement e-learning offer training to teachers through in-house seminars and training. However, only 2 BUs have teachers at postgraduate level in areas related to e-learning, and research was carried out at 2 BUs on the use of ICT in learning.

Table 7 shows the factors of institutional success for the implementation of e-learning.

Table 7: Institutional success factors for the implementation of e-learning

Success Factors	Completely Agree	Partially Agree	Don't know	Partially Agree	Totally Disagree
Institutional strategy for e-*learning*	4	2	0	1	0
Support staff for *e-learning* activities	4	1	0	0	2
Support for students	2	4	0	0	1
Quality of evaluation	0	5	1	1	0

The results of Table 7, concerning the success factors, show that the BUs consider the existence of an institutional strategy as fundamental, being that the weakness of the strategy can be one of the aspects that has already been indicated as being one of the biggest obstacles in the implementation of e-learning (cf. Tables 2 and 3).

Furthermore, the results show that support for teachers and students during e-learning activities is an important aspect. Trentin (2008b) argues that support is one of the aspects considered critical to the implementation of e-learning, being present across the dimensions of sustainability.

Another aspect to highlight is the evaluation of the quality of e-learning which, according to D'Amario (2014), when there is a lack of awareness about such quality, has on several occasions diminished the true potential of e-learning. In this perspective, Trentin (2008a) stresses that the analysis of the quality of an e-learning system is conducted essentially based on three indicators: the didactic quality of the course, the "technical" quality (not only technological) of the whole system and the quality of the support services.
The results of the study showed that 6 BUs agree with the importance of quality assessment, but only 1 UB supervises and evaluates the content published on the platform, and only one UB conducts an evaluation of students on the pedagogical use of ICT and its relationship in the activities of the discipline.

Only 4 BUs evaluate teachers and the most evaluated indicators are the level of didactic communication (feedback, forum), pedagogical approach and e-learning implementation model.

All the seven BUs that implement e-learning provide initial training to students that includes a period of adaptation at the beginning of the course. The involvement of ICT technicians also allows 5 BUs to provide continuous support to students.

For the financial dimension, only 4 BUs are expected to make investments in the near future in the area of e-learning. The biggest difficulty is that the resources are only internal and all BUs think that a greater investment on the part of the university is necessary.

According to Rosenberg (2006), without an adequate strategy, the risks are that financial investments are mainly directed at technology, leaving the training of personnel, and the preparation of teaching material without a budget

Conclusions

Of the 12 BUs that participated in the study, only 7 teach courses in the e-learning modality and 5 BUs do not use e-learning for teaching. The courses administered are mainly at doctoral and master's level and only one of the BUs administers licentiate courses in the e-learning modality. The 5 BUs that do not teach courses in e-learning modality presented the biggest reason as being the distrust in the methodology and the lack of strategy of the university. The possible causes of this lack of confidence may be the fact that there is a small number of teachers trained in this area and the weak research done on the use of ICT in learning at BUs.

The main digital platform used for the delivery of content is MOODLE, employed mainly as a repository and for submitting works. It is evident that these activities do not require high skills in the use of computer tools. It was found that in most cases the employees involved are ICT technicians, who guarantee support in the technological area to teachers and students. On the other hand, there is a lack of support in the didactic and pedagogical areas. The cause of the absence of the use of innovative resources such as multimedia or games, which would render the learning process a more attractive and motivating environment for students, may be the poor research and training of teachers in the use of ICT.

Regarding the motivations for implementing e-learning, the 7 BUs answered that one of the objectives is to improve the quality of teaching. In contrast, only 1 UB supervises and evaluates the content and conducts student evaluations. This lack of evaluation can negatively influence the implementation and reduce the true potential of e-e-learning.

The management of the implementation of e-learning for 5 BUs is done at the local level, mainly the by course coordinators compared with only 2 Bus from which the management of implementation takes place at the central level. However, the BUs think that one of the main success factors for the implementation of e-learning is the existence of an institutional strategy.

The study also concludes that there is no strategic plan that defines the objectives of e-learning (which model to implement) nor the strategies necessary to implement them from the dimensions presented in the study.

With regard to the dimensions of culture and institutionalization, it is concluded that e-learning should not be limited to the training of students, it should be a model used for the continuous training of UCM teachers and employees. Periodic psychopedagogic and methodology training for teachers, such as specific training for employees, should be done in e-learning mode, where it is possible to provide a face-to-face part, but then continue online for a certain period.

In the analysis of dimensions at UCM, it was found that only the dimensions of technology and pedagogy are minimally referenced. At the organizational and cultural level there is still no institutionalization and an accepted view on the implementation of e-learning.

Results of the study show that the implementation of e-learning is not a "self-runner" that develops alone, but requires a process of change that must consider all dimensions based on strategies

following the others: content, professional, informal, technology, economy, organization, culture and pedagogy.

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