

# LMS Usage Exploration : Key Factors in Moroccan Universities

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## Abstract

In 2020, our planet was shaken by the health crisis linked to Covid-19. Moroccan universities have also integrated or activated video-conferencing tools, learning management systems (LMS)<sup>1</sup> and many other tools to deal with health restrictions. The use of these learning management systems has now become a major challenge for many higher education institutions (Mohammadi et al., 2021). Nevertheless, several studies shed light on many uncertainties about what influences teacher-researchers when it comes to their use and commitment to LMSs (Kite et al., 2020). There is also clear evidence that technical issues and lack of appropriate support are the main barriers to teacher engagement with LMSs (Al Meajel & Sharadgah, 2018; Bolliger and Wasilik, 2009). Therefore, our study aims to determine the elements that influence teachers in their use of LMS. This is a qualitative approach conducted with teachers at Ibn Zohr University. The results show that digital literacy and other factors influence the adoption of LMS by university teachers.

**Keyword :-** Learning management systems; digital literacy

## Introduction

At the beginning of the Covid-19 pandemic, and in order to prevent a widespread and rapid spread of the virus within its institutions, the Ministry of National Education, Vocational Training, Higher Education and Scientific Research has decided to suspend all face-to-face courses at all universities in the Kingdom (Hamdani, 2021). As a result, the higher education system in Morocco, as well as worldwide, has gone through a period of transition marked by significant changes that have influenced pedagogical and learning approaches. In the context of this necessary and unavoidable transition to online education, institutions have adopted various digital tools to overcome the space and time constraints imposed by the health crisis (DAAQILI, 2020).

Despite the many features developed in Learning Management Systems, the success of these systems was strongly linked to a detailed understanding of the challenges and factors influencing their use by users (Mohammadi et al., 2021)

## Definition of LMS and adoption factors

A Learning Management System (LMS) is a platform used to deliver and administer e-learning courses (Coates et al., 2005) (Jamal and Shanah, 2011). Moodle, Sakai, Blackboard and ATutor are the best known and most used software solutions for online learning. These systems are used to manage students, exams, quizzes, assignments, courses, messaging, downloading materials, etc. (Almaiah and Alyoussef, 2019). Almaiah and Alyoussef (2019) studied the factors influencing the adoption and use of e-learning among educators and learners. The result revealed that trust factors (trust in the Internet, security, digital signatures, electronic payment, laws and regulations), quality factors of the e-learning system (effectiveness, utility, ease of use, reliability, content design), factors of self-efficacy (awareness, training programs) and cultural factors (ICT knowledge or digital literacy, e-society, social media) are the key factors affecting the use of learning management systems by educators and learners. Taat and Francis (2020) studied the factors influencing the acceptance of e-learning in Malaysia and found that the

usability of the system, the characteristics of the teacher, the quality of the system, the quality of information and technical support have an impact on the acceptance of e-learning. Research also indicates that perceived benefits in terms of content, time and course simplicity are other key factors that influence acceptance of e-learning (Almaiah & Al Mulhem, 2019; Almaiah and Alyoussef, 2019). On the other hand, Bouyzem and Al Meriouh identified major obstacles from the perspective of teachers in the context of Abdelmalek Essâadi University. According to the authors, the lack of technical and institutional support, communication problems in the dissemination of e-learning strategy and policies, resistance to change, lack of regulation, lack of culture of sharing, lack of e-learning awareness, and low computer skills are major factors that lead to reluctance to adopt online learning. Lack of technical support, described as the unavailability of resources needed for content creation and Internet access, was also considered an important factor (Eltahir, 2019). Other research results in Malaysia indicate that the main factors influencing the use of e-learning among teachers are related to the course (course design, course content, course support), social and cultural (beliefs of instructors, university rules and regulations, new roles for instructors and teachers in online learning, laws related to online learning) and technological factors (internet access, cost and software skills) (Aldowah et al., 2019). The research also revealed that teachers face challenges in terms of ICT infrastructure and e-learning, funding, lack of operational policies for e-learning, development of online content and internet connection challenges in the context of Russian universities (Takhumova et al., 2019).

The following dimensions determine the factors affecting LMS usage: digital literacy level and LMS service quality.

Digital literacy refers to the potential of human resources to manage and use LMSs according to (Beebe, 2010)<sup>2</sup>. Quality of service, however, indicates quality issues related to learning, teaching and learning materials. The literature has studied this concept by referring to the quality of the content (quality of downloaded media, diversity of media, compatibility of

learning media with the learning environment, accessibility of media), quality of service (quality of educational service via LMS) and quality of LMS (usability, availability, security, reliability and accessibility)(Abdul Halim, 2011; DeLone and McLean, 1992; Pham et al., 2019).

The research above highlights the most significant factors influencing the adoption of e-learning. Thus, it is appropriate to identify the main factors weighing on the use of LMS in the teacher within the Moroccan university.

**Research methodology and context of the study**

To achieve the objectives of this study, we opted for the qualitative method based on: interviews (individual or focus groups), observation of participants and analysis of documents to understand and describe meanings, relationships and models in data(Barada, 2013). The qualitative approach has several advantages such as the thorough study of the context, the revelation of the hidden impact of culture on the research problem, the highlighting of the most salient questions, useful for accessing the tacit feelings associated with the subject, and

is recognized as one of the best methods for understanding the world, society and institutions (Barada, 2013). The qualitative approach is the best way to extract the influence of the social and organizational context on the use of the system <sup>3</sup>(Kaplan and Maxwell, 2005). Thus, it provides a detailed understanding of how users perceive and evaluate the system used.

Our study is conducted at Ibn Zohr University in October 2022. The interview questions were addressed to research professors with more than 15 years of experience in the field of higher education and active on the LMS MOODLE, and also to administrators responsible for the management of the platform. In total, 2 teachers of the Higher School of Technology of Agadir, 1 teacher at the National School of Applied Sciences of Agadir, 1 teacher at the Faculty of Arts and Humanities of Agadir and 1 teacher of the Higher School of Technology of Guelmim, as well as 4 administrators within the computer department in the Presidency of Ibn Zohr University were interviewed individually, face-to-face, at the university premises.

**Table1: Characteristics of interviewees**

<b>Number</b>	<b>Post office</b>	<b>Establishment</b>	<b>Seniority</b>
<b>2</b>	<b>Teacher</b>	<b>ESTA</b>	<b>15 years or more</b>
<b>1</b>	<b>Teacher</b>	<b>ENSA</b>	<b>15 years or more</b>
<b>1</b>	<b>Teacher</b>	<b>ESTG</b>	<b>15 years or more</b>
<b>1</b>	<b>Teacher</b>	<b>FLSH</b>	<b>15 years or more</b>
<b>4</b>	<b>Administrator</b>	<b>UIZ Presidency</b>	<b>8 years or more</b>

Semi-structured interviews were used as a method of data collection. In this context, the questions are designed in an open way to make the interview more interactive. Thus, the questions aimed to identify the challenges faced by users (teachers/administrators) of the MOODLE LMS, including organizational culture, digital literacy level, and quality of service aspects.

**Survey results**

We present the results of the qualitative data analysis according to two criteria: Digital literacy and quality of service.

**a.Digital literacy**

The interview with the participants indicated that the teachers and administrators in charge of managing MOODLE had not been sufficiently trained in the use of this platform. Users faced several constraints when managing and creating activity reports on MOODLE. These same users have previously reported a lack of experience in course management, user

management and activity reporting. Although the creation of comprehensive and useful activity reports is key to the success of MOODLE, the lack of skills becomes problematic to justify the very advantage of this feature. In addition, users had difficulty understanding terminologies, features and other aspects of the MOODLE tool. Interviewees highlighted the lack of technically qualified teaching engineering staff in academic institutions. A technically qualified team in pedagogical engineering has the role of training and accompanying users of LMS platforms in mastering these tools and overcoming technical obstacles. A computer director mentioned that the university is facing a shortage of available and highly qualified trainers to train teachers. According to a professor in charge of teacher training at Ibn Zohr University, “The lack of training means that the adoption of LMSs remains below expectations. This results in a low level of motivation among teachers to use the LMS and consequently less electronic content loaded on the MOODLE tool.” The following table summarizes the sub-factors of digital literacy that influence teacher adoption of LMSs:

Table2: Sub-factors of digital literacy influencing LMS adoption by teacher-researchers

Sub-factors of digital literacy	Definition	Reformulation of responses
Soft Digital Skills	It shows the degree of knowledge and experience in the use of digital technologies such as the use of tablets, computers and the Internet	Some teachers are not very familiar with technological tools. They rarely use them in daily teaching activities
Skills in the use of LMS	It describes the level of familiarity in using LMS	So far, the majority of teachers use LMSs only to share courses in PDF format. Exams are conducted in person, and corrections are done manually
Preparation of electronic content	Knowledge and experience in the development of electronic content adapted to the formats required in LMS	One teacher said he did not know the process for creating high-quality electronic content. He says he doesn't see the point of creating audio or video content when he can teach directly in an auditorium."

#### b. The quality of service

Quality of service has been defined under three sub-themes: quality of content, quality of teaching, quality of the system.

Interviewees noted the existence of serious challenges in creating electronic content adapted to LMS. This content may contain lectures, course notes, videos or audio files. The interviewees stated that they did not take into account the diversity of media. The majority only load PDF media on the MOODLE platform, whereas this type of file alone is not a sufficient resource for the many scientific fields. To illustrate, a teacher at the Faculty of Science said: "To teach subjects related to chemistry, biology, mathematics, computer science, engineering and economics, it is necessary to have videos, audio recordings, lecture notes and course slides for various tasks. But we can only find textual material in most cases." Testimony from university officials also revealed that the majority of professors rarely contribute to the development of electronic content. One of the university administrators said, "Content developed by other authors, electronic content creators and academic institutions has been used as course material." The lack of detailed and unified guidelines for the development of electronic content in institutions is a source of several failures.

The quality of teaching is another aspect of the quality of services identified in this research. Just like face-to-face teaching, teaching via LMS requires a close relationship between students and teachers. This relationship helps students and faculty engage in regular discussions, feedback, support and mentoring on educational activities. One department head said that the majority of teachers in his

department have not engaged in any discussion via LMS functions, such as chat and forums. The lack of interaction between the two actors in the educational process through LMS is a major problem in teaching. In addition to the lack of teacher-student interaction, interactions between students themselves on the LMS are rare, making it difficult to exchange information. In addition, the irregularity of teachers' login to their MOODLE accounts and the deficit in terms of the number of course contents and materials loaded on the platform presents another major problem reported by managers after the course evaluation. Officials added that a considerable number of professors loaded their entire courses out of order. This amount of information received by students does not give them time to assimilate the course. It would have been more judicious to divide it into chapters and share it according to the progress of the program. Thus, this irregularity in the use of LMS by teachers has a negative impact on the use of LMS by students.

Based on the data collected from the interviewees, the level of knowledge and experience relating to LMS and electronic content management is one of the key factors significantly impacting the very use of LMS, which in the eyes of some respondents negatively influences their intention to use these technologies.

Perceived relevance is another theme that was identified across the interviews. The table below brings together identified elements of this theme, which influence the adoption of LMS by teachers:

**Painting3: Elements of the perceived relevance of LMS by teacher-researchers**

Sub-factor of "Perceived relevance"	Definition	Rephrasing the answers
Utility	Indicates effectiveness, relevance and productivity when using LMS in teaching and learning	One teacher among the interviewees thinks that the use of LMS does not contribute to the process of transferring knowledge from the teacher to the student.
Expected result	Describes the outcome of teaching using LMS	Another teacher assumes that the use of LMS in e-learning will have no impact on the quality of teaching in general, and that on the contrary, the creation of online courses takes even more time

### Discussion and analysis of responses

Following the transcription of the interviews and their analysis, the results revealed the existence of several gaps in technical and digital skills necessary to use and manage LMSs. Several reports in less developed countries prove this observation (Bouyzem and Al Meriouh, 2020)<sup>4</sup>. A lack of prior experience using LMSs, as argued by Mohammadi, Mohibbi, and Hedayati (2021). The training provided for the use of LMS by the university for the benefit of teachers is not sufficient. The previous training that some teachers benefited from, face-to-face or remotely, was not adapted to their different levels of digital literacy. Some teachers are able to complete the training more easily and quickly than others. It is therefore imperative to assess the level of digital literacy and the level of adaptation of each teacher before assigning them to the training program that corresponds to them. There is no awareness about the importance and role of LMS in the higher education process. Resistance to change remains a cultural barrier facing LMS adoption. Teachers are reluctant to disseminate their work and the content they have created. Other literature has highlighted the cultural challenges faced by teachers when using LMS, in terms of roles and rules of teaching within the university (Aldowah et al., 2019)<sup>5</sup>. Cultural factors overall have not been widely studied by the literature (Mohammadi et al., 2021)<sup>5</sup>. This study also demonstrated that quality of service is a barrier to the adoption of LMS.

### Conclusion

This article highlighted the factors influencing the use of LMS among teachers, including: quality of service, digital literacy and perceived usefulness. The opinions and inductions observed made it possible to enrich the existing literature and knowledge on the factors influencing the adoption of LMS at Moroccan universities and in other similar countries.

Like any other study, our research has limitations. First, the study is limited in its scope, since it investigates the factors influencing LMS adoption within a single Moroccan public university. Furthermore, this study used a qualitative approach and that has its own limitations due to the small sample size. Therefore, the results cannot be generalized although efforts

were made to collect as much information as possible. Future research could be conducted on developing a validated conceptual model using a quantitative survey representing the factors affecting the adoption of LMS by teachers and even students. In this sense, possible research will provide significant results supported by generalized statistics.

### REFERENCES

- 1
  - <sup>2</sup>(Sokout and Usagawa, 2018)
  - <sup>3</sup>(Leavy, 2017)L
  - <sup>4</sup>(Aldowah et al., 2019; Beebe, 2010).
  - <sup>5</sup>(2016)also highlighted that teachers may experience reluctance to share their work and created content, particularly when using learning management systems (LMS). This reluctance may be linked to cultural challenges such as the roles and rules of teaching within the university.
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