



Choosing an LMS learning platform: Criteria and comparison

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Abstract

E-learning platforms are digital systems designed for distance training, teaching and learning. There are different types of learning platforms, each with their own characteristics and benefits. Our work consists of carrying out a comparative study of the main types of learning platforms Moodle, Canvas, Open Edx and Wordpress with LearnDash through nine comparison criteria according to the FFFOD (French Forum for Open and Distance Learning): Creation and organization of training, Skills and badges, Design and ergonomics, Individualization and communication, Monitoring and reporting, Installation and handling, Collaborative learning, User management and accessibility. The choice of platform also depends on the specific needs of the learners and the educational objectives to be achieved.

Keywords: Online learning platforms, Characteristics and selection criteria, LMS, LCMS, FFFOD.

Introduction

Platforms are becoming increasingly important. They provide learners with quality online training using technology. These platforms were designed to deploy learning and track learner progress, so you can focus more on developing your learning content, (Darcy Dario, 2022). Indeed, the year 2018 was characterized by the entry into force of a profound reform (law of September 5, 2018 relating to the freedom to choose one's professional future and which profoundly modifies professional training) which gave rise to a new phenomenon: "the advent of enriched multimodality" (according to the FFFOD: French Forum for Open and Distance Training), (FFFOD,2021).

Professionals in distance learning are concerned with its technical aspect. As for the year 2020, marked by the advent of the pandemic, it saw a development of innovative educational systems. In addition, the platforms play an important role insofar as they contribute to the realization of training, build scenarios individualized and evolving, promote reflective analysis of work.

Problematic

The choice of a distance training platform depends on the quality of the media coverage of the resources and the relevance of the environment it offers to compensate for the spatial and temporal distance that separates teachers and learners. For this, the questions that arise:

How can we recognize, on the one hand, a quality platform that meets the norms and standards as they are recognized everywhere in distance learning systems? And on the other hand, could the platform being evaluated respond to the specificities of the continuing training that we intend to carry out? To what extent will it promote learner autonomy? Their support in the process of appropriation of basic knowledge and the development of professional skills?

These questions and many others concern us as we are in the evaluation phase of the platform, the results of which will allow us to judge its technical and educational value and therefore make the necessary decision.

I- Theoretical framework

Web-based distance learning (DEL) platforms are becoming increasingly common. Their developments are rapid. They are born and die at a steady pace. The choice therefore becomes difficult. It depends on the specific needs of learners, educational objectives and the context of use. (John Chambers, 1999). Some platforms focus on course management, while others encourage collaboration, personalization or informal learning. The authors present the theoretical framework under three categories: Online learning and management of educational content, the choice of a platform: problems and criteria and Comparison according to predefined criteria.

1- Online learning and educational content management

Online learning, known as e-learning, is a method of acquiring knowledge through the Internet or other digital technologies. It offers great flexibility by allowing learners to access courses and educational content from anywhere and at any time. (OVAREP, 2000). Online learning can take various forms, such as online courses, webinars, MOOCs (Massive Open Online Courses), video tutorials, discussion forums, and many more. Online learning platforms allow the learning experience to be personalized, adapting content and pace to the individual needs of learners. Learners can interact with their peers and instructors using online communication and collaboration tools. Learning management systems (LMS) help track learners' progress, evaluate their performance, and generate reports. Online learning expands access to education, enabling people from all geographic and socio-economic backgrounds to take courses. Educational content management encompasses the creation, organization, distribution and maintenance educational materials.

Online learning and educational content management are transforming the way we acquire knowledge and skills. According to Isabelle Bertrand (2007), “We will organize distance training via the platform to practically test the relevance of the environments by putting into perspective the possibilities offered by the latter and the educational presuppositions of the continuing training of teachers based on the skills-based approach. Because we consider platform models, their architecture strongly depends on the nature of the training. There doesn't seem to be a "generic" platform. Furthermore, in many cases, the models implemented are polymorphic or hybrid, which makes them even less reusable in the context of other training. These approaches harness the power of digital technologies to make education more accessible, more flexible and more personalized.

2- Learning platforms

Learning platforms are digital environments designed to facilitate online teaching and learning. (Hayaati.N., Alwi .M., Ip-Shing Fan, 2010). They offer a variety of features and resources to enable learners to access educational content, participate in courses, collaborate with other learners and monitor their progress, and to acquire new knowledge through technological means to support the process of building an educational system (Mihalca.R., Uta. A. 2008), we find :

2-1- (Traditional online learning platforms) LMS - Learning Management Systems

Designed to manage online courses. They offer features for content creation, learner tracking, registration management, quiz and assessment creation, and communication tools. (Sejzi .A. A., Arisa .B. 2013). Examples: Moodle, Blackboard, Canvas. They are well suited to managing structured training programs and are widely used in formal education and corporate training (Ninomiya. S., Chawan. M., Meshram B.B. (2011).

2-2- Collaborative learning platforms:

These platforms are focused on collaboration and social learning. They offer features such as discussion forums, wikis, collaborative workspaces and resource sharing tools (Michel Arnaud, 2003). Examples: Edmodo, Google Classroom. They encourage interaction between learners, collaboration and peer learning.

2-3- Adaptive learning platforms:

use artificial intelligence algorithms to personalize content and learning activities according to the needs and skill level of each learner. (A. BAUDRIT, 2007). Examples: Knewton, DreamBox. They offer personalized learning, allowing each learner to progress at their own pace.

2-4- MOOC (Massive Open Online Course) Platforms:

MOOCs are designed to offer online courses open to a large number of participants. They often offer video content, quizzes and discussion forums (Bowen et al, 2013). Examples: Coursera, edX. They provide access to a wide range of courses and topics, but may lack personalized interaction.

2-5- Corporate training platforms:

These platforms are specifically designed to meet the training needs of companies. They offer functions for employee management, compliance tracking, personalized content creation, and more. (Lecocq X., Demil B. and Warnier V. 2006). Examples: LinkedIn Learning, SAP Litmos. It is suitable for businesses and organizations for employee training.

2-6- Informal learning platforms:

These platforms facilitate informal and self-directed learning. They allow users to find and share educational resources online (Liquète, 2010). Examples: YouTube, TED, Khan Academy. They encourage independent learning and the discovery of varied content.

Our work focuses on e-learning platforms (LMS) Learning Management System or (CMS) content management system, the authors propose to make a comparison of the four most used platforms: Moodle, Canvas, Open Edx and Wordpress. through the nine selection criteria: Creation and organization of training, Skills and badges, Design and ergonomics, Individualization and communication, Monitoring and reporting, Installation and handling, Collaborative learning, User management and accessibility. To this end our theoretical framework presents the different definitions proposed in the literature, its functionalities and the choice of the platform: problems and criteria, according to the FFFOD, 2022. (LMS fffod Guide, 2022)

3- Types of LMS e-learning platforms

3-1- Open Source LMS platforms

They are free and easily available. These platforms such as “Moodle, Wordpress with LearnDash, Ilias, ClarolineConnect, Canvas, etc.” are efficient but require a lot of administration effort.

3-2- Proprietary LMS platforms

Proprietary (paid) LMS platforms are tools created by private companies. These platforms go further than Open Source LMS platforms and are easier to administer.

4- Main features of LMS and LCMS

Learning Management Systems (LMS) and Learning Content Management Systems (LCMS) are learning management systems used to create, distribute and manage online educational content. However, they have slightly different functionalities depending on their main purpose, (Hall, B. 2003). Here is an overview of the main characteristics of each of them

4-1- LMS Features

An e-learning platform or Learning Management System (LMS) is software allowing the management of the activity of the people concerned (learners, trainers, administrators) and the distribution of educational

content. It is therefore a distance learning platform which supports anyone involved in an online learning process, (Grenache. H.C., Radigales F. 2008).

By extension, we designate under the term LMS, the system consisting of:

- o Learners belonging to a virtual community.
- o An online learning platform which hosts on the one hand the content developed according to a training strategy, and on the other hand the evaluation tools.
- o Trainers and/or tutors who lead this training.



Figure 1 Composition d'un LMS

It therefore fulfills two major functions, learning and management.

✓ **Learning:**

- Training curriculum monitoring / Course management, facilitate the creation of online courses by allowing trainers to upload content, organize course modules and set deadlines for activities
- Monitoring and assessment of training and evaluation: they provide tools to monitor learner participation, manage evaluations, grade quizzes and assignments, and produce reports.
- Compliance tracking: Some learning management systems include compliance tracking features that help ensure learners have completed and successfully completed required training.
- Virtual classes – interaction between tutors and learners in synchronous or asynchronous mode (audio/video conference, dialogue, whiteboard, etc.)
- Communication: They allow communication between learners, trainers and administrators through forums, chat rooms, internal messages, etc.
- Personalization: LMS allows you to personalize the appearance, notifications and learner preferences

✓ **Management:**

- Resource management: LMS can store and manage different types of learning resources, such as documents, videos, web links, etc.
- Learner management (defining different types of profiles with associated rights): LMS allows you to create and manage user profiles, including learners, instructors and administrators
- Registration management: They manage the registration of learners for courses, assign roles and permissions and facilitate group management.

4-2- Features of the CMS and LCMS

The CMS, or content management system, aims to simplify the creation and management of online content. They allow a better frequency of updates of already published resources (and at a lower cost). Example: Drupal and Wordpress are the popular content management systems. (Kritzinger .E., Solms. S.H von, 2006).

LCMS Learning Content Management System: it is a learning content management system. An LCMS is a system (most often based on Web technologies) that allows you to create, validate, publish and manage learning content (Irlbeck, S., Mowat, J. 2005).

To better understand what an LCMS is, it is necessary to start from the following formula:

$$\text{LCMS} = \text{LMS} + \text{CMS}.$$

Among the most popular features of LCMS are:

- **Content creation:** LCMS are primarily designed for the creation and management of educational content. They provide tools to create course modules, lessons, quizzes, videos, etc.
- **Content reuse:** LCMS allow educational content to be stored and reused efficiently. Any content update is automatically propagated.
- **Collaboration:** LCMS facilitate collaboration between content authors and instructors for creating, reviewing, and updating educational materials.
- **Copyright management:** LCMS provide features for managing copyrights, licenses and permissions for educational content.
- **Cross-platform publishing:** LCMS allow content to be published across multiple platforms, including LMS, websites, and mobile apps.
- **Integration:** They can be integrated with other systems, including LMS, to facilitate the distribution of the created content
- **Analysis:** Some LCMS offer analysis tools to evaluate the effectiveness of learning content.

LMS focus on course and learning management, while LCMS focus on creating, managing, and publishing educational content. Organizations choose one or the other based on their specific online learning needs

Table 1 Characteristics of the LMS and LCMS adopted by Irlbeak and Mowat, 2005

Features	Functionality R: Robus L: Limit	
	LMS	LCMS
Manage Learners	R	L
Manage Content		R
Create Content		R
Manage Instructor-led Sessions	R	
Course Catalogue	R	L
Registration System	R	L
Competency Management	R	L
Lunch and Track eLearning	R	L
Assessment Creation. Evaluation. and Feedback	R	R
Searchable Library Of Reusable Content		R
Collaboration / Synchronous Learning Tools	L	R
Integration with Human Resources Application	R	
Locate and Deliver Specific Content to a learner		R

R : Robuste , L : Limitee

4-3- Choosing a Platform: Issues and Criteria

Choosing a learning platform is a complex issue, for educational institutions, businesses, trainers and learners. which requires careful assessment of needs, objectives and available resources. Choosing the right platform can have a significant impact on the quality of online teaching or learning, as well as the learner experience, in addition it can be an institutional choice formulated in elaborate specifications based on strategic orientations, an organizational context, expected technical and educational functionalities. (Edflex Team, 2023).

4-4- Criteria for choosing a platform for training

The choice of a learning platform or an educational content management platform is based on a set of criteria which will be used strategically and by consulting relevant resources, allows you to make a better choice on the management platform. learning content that best meets needs, (CDCP Digital Learning, 2021)[21]:

• Pedagogy

Training on an e-learning platform is qualitative when it can be automatically translated and offer educational content adapted to everyone's needs. The possibility of individualizing courses will, for

example, be of little benefit if you deploy compulsory training unlike assessment tools. Likewise, having an integrated authoring tool will be more relevant if it is your trainers who develop the content than if you outsource its production. Finally, you will certainly attach great importance to communication and collaboration tools if peer learning is at the center of your strategy.

- **Monitoring and performance**

Effective and qualitative online training must highlight information on learner progress, analyses, statistics, digital rewards, graphs, etc. The importance of traceability of learner activities and restitution and formatting the data highlight the evolution of each person in order to have an idea of the success of the training. This data is also a great way to motivate learners, students and employees who follow online training.

- **Design and ergonomics**

Training on an e-learning platform must be simple and ergonomic for learners and trainers. Different educational content must be made available easily and quickly. Having a responsive design interface and/or having a mobile application is all the more important. In order to make the choice, give importance to design and loading speed. These two criteria are fundamental to ensure the success of the training.

- **Deployment**

Deployment, whether in terms of time or cost, must be related to volume to be properly assessed. Indeed, there will be less effort to interface the LMS with the HRIS if only a few dozen learners are registered per year. For the same reasons, installation and configuration costs will be more easily justified for large organizations.

- **Technical**

If the characteristics of an LMS can meet your needs at a given moment, plan ahead 2 or 3 years in order to check its adaptability according to technical developments in the sector and the volume of learners. In addition to the technical characteristics of the platform, ask yourself about the necessary skills you must have to ensure the maintenance of the LMS and user assistance

- **Offers and Services**

Volumetry once again enters the analysis when it comes to comparing types of subscription, flat rate or per user. Then try to identify the complete cost per user to compare prices, at any time and according to the evolution of your uses.

- **Accessibility**

It is essential to think about the accessibility of interfaces for people with disabilities, especially since it is a question of teaching. It will then be useful to assess whether this issue is taken into account by the publisher.

Whether the LMS is proprietary or open source, you will pay attention to the existing service offering (and verifiable with other clients). Proposed by the publisher or by a service company, it must be adapted to the level of criticality that you have defined.

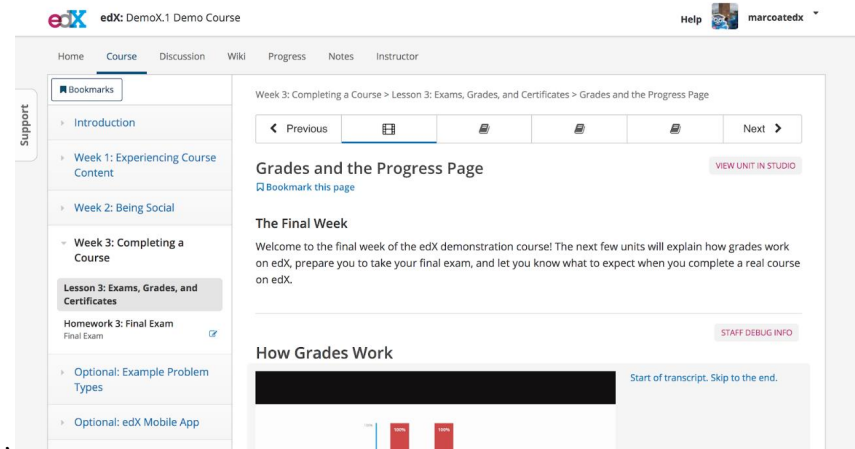
5- E-learning platforms and comparison between them

Our work consists of presenting the four most popular learning platforms: Moodle, Open Edx and Wordpress with LearnDash



5-1- OpenEdx and the MOOC approach

OPEN EDX is a platform suitable for deploying open and massive online courses. OpenEdX is an open-source, cloud-based learning management solution offered by edX (a nonprofit organization founded by Harvard University and MIT to provide high-quality online education to all students in the world). It is used by small and medium-sized businesses to host training modules and open online courses. The tool allows users to create the course structure and upload content, including videos. Managers can organize course schedules. It is used as an e-learning platform by many universities around the world. The training is generally organized around short sequences with each short video interspersed with interactive exercises. The website is responsive and the interface is particularly clean. It is structured into several components. The two main ones are the online learning platform and the course creation tool, Studio. As it has common features with other e-learning platforms. It is possible to produce, deliver and manage lessons and tests online. Typical collaborative features include homework submission, discussion forums, messaging, wikis and surveys.



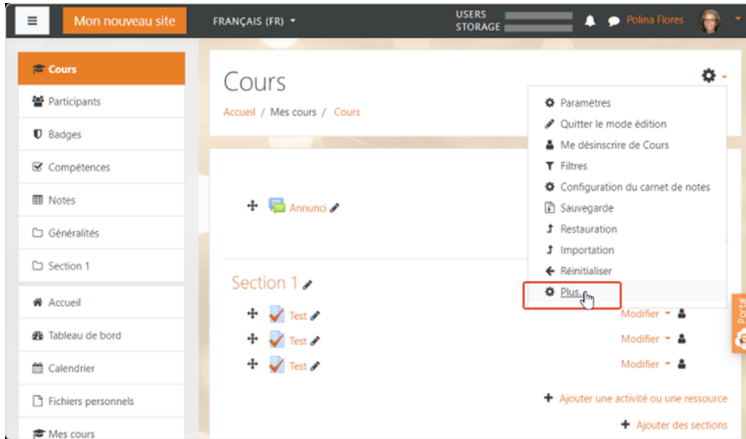
Open Edx interface.(Open Edx)

5-2- Moodle

Moodle is an open source e-learning platform used to create communities of learners around educational content and activities. With more than 245,065,887 users worldwide, both in academia and business, Moodle is one of the most popular learning platforms.

Developed by Martin Dougiamas in 2002, its development is coordinated by MOODLE HQ, an Australian company of around thirty developers which is financed by around sixty partners and which offers services around the MOODLE platform.

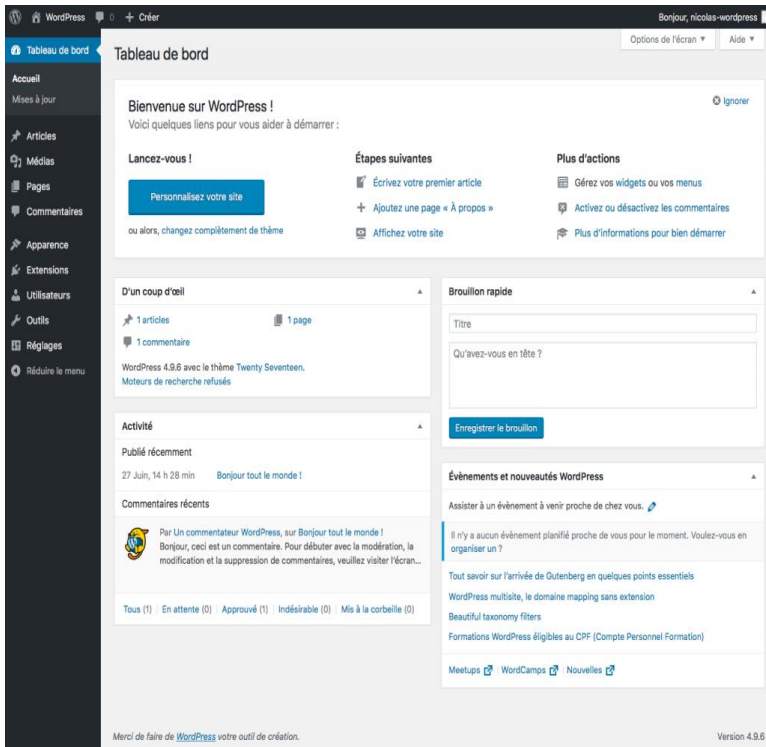
The concept and development of MOODLE was guided by a “social-constructivist” approach to learning, which involves active contribution from learners in their training.



Moodle interface.(Moodle)

5-3- Wordpress

WordPress has its origins in the software developed by Michel Valdrighi in 20017, (Lisa Sabin-Wilson, Cory Miller, Kevin Palmer and Andrea RENNICK, 2011), an open-source blog publishing software based on a database (MySQL). Michel Valdrighi added many features before stopping development of the software for personal reasons at the end of 20028. WordPress.org is the official site of the content management system from which it is possible to download the open-source version of WordPress, themes and plugins. Before downloading, the user must choose a domain name and find a host if they want to put their site online. Installing WordPress from WordPress.org allows you to have access to all of the website's files and to modify it without restrictions. On the other hand, it is up to the user to carry out technical maintenance (WP Marmite, 2017). WordPress is known for its many features allowing users, advanced or not, to create a website and personalize it. Its features are designed to make publishing activity as easy as possible and accessible to everyone.



WordPress interface.(WordPress)

6- Comparison between the 2019 FFFod guide and that of 2022 & Application of these criteria to choose the best platform

The "FFFOD Guide" the Forum of Digital Training Stakeholders is a document which provides essential information on digital training. It is an association of professionals in e-learning, digital learning and distance training, it aims to promote the use of digital technologies in training, to encourage collaboration between players in the sector and to share good practices in e-learning. (FFFOD).

II- Practical side

In this part, we will practice the choice of a better e-learning platform, through the criteria adopted by the fffod be 2019 and 2022. Through the comparison between three examples of LMS: Moodle, WordPress and OpenEdx

We chose these three LMS because they are the most used, the best known and the most adapted to the needs of students, trainers and administrators. (BARNANA SARKAR,2023)'

We will try to make a comparison between the criteria adopted by the fffod set in 2019 and those retained in 2022, to try to determine their evolution, the progression of methods and technological means, as well

as the reasons for choosing these criteria, by scoring method that we will adopt, that is to say, try by using criteria and sub-criteria to select the LMS which has the best overall scores, and then we try to make a comparison of the three required platforms. in 2022 to conclude the best and adapt the choice.

1- Selection criterion for an LMS according to the FFFOD guide: (2019 Guide)

The selection criteria	Features
USER MANAGEMENT	<ul style="list-style-type: none"> • Registration/Authentication • Registration for training • Creation of profiles • Tracking
SUPPLY MANAGEMENT TRAINING	<ul style="list-style-type: none"> • Creation of training • Course creation • Creation of catalogs
CREATION OF ACTIVITIES EDUCATIONAL	<ul style="list-style-type: none"> • Diversity • Interactivity • Media management • Evaluation activities • Collaborative learning • Individualization
COMMUNICATION TOOLS	<ul style="list-style-type: none"> • Shared calendar • Integrated email service • Notification system • Instant messaging • Integrated virtual classroom • Integrated social network
SKILLS MANAGEMENT	<ul style="list-style-type: none"> • Skills repositories • Badges • Portfolio
DESIGN AND ERGONOMIC	<ul style="list-style-type: none"> • Graphic customization • Linguistic customization • Responsive design • IOS and Android apps
TECHNICAL	<ul style="list-style-type: none"> • Ease of installation • Modularity • Required web technologies: Apache/Nginx, • PHP, MySQL/PostgreSQL

2- Selection criteria for an LMS according to the FFFOD guide (2022 Guide).

Selection criteria	Features
USER MANAGEMENT	<ul style="list-style-type: none"> • Registration/Authentication • Training registration • RGPD Compliance (General Data Protection Regulation)
CREATING AND ORGANIZING TRAINING COURSES	<ul style="list-style-type: none"> • Training management • Catalog creation • Course creation • Presence of authoring tool(s) Diversity and interactivity
INDIVIDUALIZATION AND COMMUNICATION	<ul style="list-style-type: none"> • Positioning tool • Individualized learning paths • Individualized content • Communication and tutoring
SKILLS AND BADGES	<ul style="list-style-type: none"> • Skills repositories • Self-validation of skills • Badge allocation • Open Badges compatibility
DESIGN AND ERGONOMICS	<ul style="list-style-type: none"> • Graphic customization • Language customization • Responsive design • IOS and Android apps
INSTALLATION AND COMMISSIONING	<ul style="list-style-type: none"> • Ease of installation (environment and application) • Quality of documentation (installation and administration) • Modularity • User community
TRACKING AND REPORTING	<ul style="list-style-type: none"> • Individual tracking • Statistical tracking • Data export • SCORM / XAPI standards
ACCESSIBILITY	<ul style="list-style-type: none"> • Understanding links • Interface compatibility with assistive technologies • Understanding form fields • Use of keyboard interface
COLLABORATIVE LEARNING	<ul style="list-style-type: none"> • Workgroups • Collaborative production • Social networking • Portfolios

3- Comparison of the selection criteria for 2019 and 2022

From 2019 to 2022, a total upheaval has been noted in pondemia and its complications whether at the health or educational level, the selection criteria have experienced an accentuated evolution and profound modifications in form and substance.

3-1- Form changes:

At first glance, we see that the number of increased by 2 between 2019 and 2022. We added new criteria such as the 8th 'ACCESSIBILITY' and the 9th 'COLLABORATIVE LEARNING', its criteria have a significant impact on learners towards autonomy and personalization such as:

- Using the keyboard interface
- Compatibility of the interface with assistive technologies
- Workgroups
- Collaborative production
- Social networks....

3-2- Fund changes:

- The "USER MANAGEMENT" Criterion
 - In 2019 the 2 sub-criteria "Creation of profiles and Tracking" of user management, became an important sub-criterion in 2022 (GDPR Compliance (General Data Protection Regulation). became important criteria in 2022 .
- The "MANAGEMENT OF THE TRAINING OFFER" Criterion
 - In 2019 the criterion "MANAGEMENT OF THE TRAINING OFFER" became "CREATION AND ORGANIZATION OF TRAINING" this presents the orientation towards the learner increasingly through: The presence of tool(s) author(s) and diversity and interactivity as 2 more sub-criteria.
- The Criterion in 2019 "CREATION OF EDUCATIONAL ACTIVITIES" was excluded in 2022 and replaced by "COLLABORATIVE LEARNING", with its sub-criteria: Working groups, Collaborative production, Social networks and Portfolios, which promotes group work and interactivity in the construction and development of digital resources.
- The "COMMUNICATION TOOLS" criterion in 2019 became "INDIVIDUALIZATION AND COMMUNICATION" in 2022, it includes the sub-criteria and adding positioning tools with Communication and tutoring.
- The "SKILLS MANAGEMENT" criterion in 2019 became "SKILLS AND BADGES" in 2022, with strengthening at the level of Auto Validation. skills and Open Badges Compatibility, the 2 sub-criteria added in 2022.

- The “TECHNICAL” criterion in 2019 became “INSTALLATION AND GETTING STARTED” in 2022, the sub-criterion ‘Community of users’ was added in 2022.

To conclude, we followed the evolution of technology and information, which is how we used new methods such as “Social Networks”. Likewise, we gave importance to the individualization of courses and content, and also to communication and tutoring and favoring the collaborative mode has become an important criterion in 2022 in collaborative learning. In the end, the change was very remarkable and it characterizes the LMS choice criteria retained in 2022

4- Methodology for comparing the 3 examples according to the 2022 criteria.

The choice of a high-performance LMS that best meets the needs of the interested party is based on a “Scoring” method (LMS having the best overall scores).

However, it has qualitative and non-quantifiable limits that must be taken into account when choosing. This method consists of first determining the selection criteria. These criteria include sub-criteria to which we assign a score to each of them between 0 and 5. Then, we add the scores corresponding to the sub-criteria to determine the score of the criterion which forms the whole. The sum of the criteria scores forms the overall score obtained by an LMS. Finally, we compare it to the overall ratings of the other LMSs in order to select the LMS that has the best overall ratings.

This is what we will demonstrate next:

4-1- Comparative table according to the 7 criteria

- Comparative table according to the criterion: Creation and Organization of training

Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria				
Criteria	sub-criteria	Note		
1- Creation and organization of training courses	Training management	5	3	3
	Catalog creation	4	5	4
	Route creation	3	3	2
	Authoring tools	3	non	Non
	Diversity and interactivity	5	4	2
Subtotal		20	15	11

- Comparative table according to the criterion: Individualization and communication

Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria				
Criteria	sub-criteria	Note		
2- Individualization and communication	Positioning tool	non	non	non
	Training management	3	2	4
	Catalog creation	5	3	non
	Route creation	5	1	3
Subtotal		13	6	7

- Comparative table according to the criterion: Collaborative learning

Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria				
Criteria	sub-criteria	Note		
3- Collaborative learning	Working groups	2	3	non
	Collaborative production	2	1	non
	Social networks	3	1	3
	Portfolios	5	non	non
Subtotal		12	5	3

- Comparative table according to the criterion: Skills and badges

Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria				
Criteria	sub-criteria	Note		
4- Skills and badges	Competency references	5	non	non
	Automatic skills validation	5	non	non
	Badge attribution	5	5	4
	Open badge compatibility	5	5	5
Subtotal		20	10	9

- Comparative table according to the criterion: Tracking and Reporting

Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria		Note		
Criteria	sub-criteria	Note		
5- Tracking and Reporting	individual tracking	5	3	4
	statistical tracking	5	1	3
	data exploration	4	3	4
	SCORM/XAPI standards	4	3	3
Subtotal		18	10	14

- Comparative table according to the criterion: User management

Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria		Note		
Criteria	sub-criteria	Note		
6- User management	Registration and authentication	5	4	2
	registratin in training courses	5	3	3
	RGPD compliance (General Data Protection Regulation)	5	non	5
Subtotal		15	4	10

- Comparative table according to the criterion : Design and ergonomics

Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria		Note		
Criteria	sub-criteria	Note		
7- Design and ergonomics	Grafical personalization	5	2	4
	Linguistic personalization	5	3	4
	Responsive design	4	4	4
	IOS Android Apps	5	non	5
Subtotal		19	9	17

- Comparative table according to the criterion : Installation and handling

Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria		Note		
Criteria	sub-criteria	Note		
8- Installation and handling	Easy installation	3	4	5
	Modularity	5	5	4
	Availability of documentation	5	4	3
	Users' community	5	4	3
Subtotal		18	17	15

- Comparative table according to the criterion: Accessibility

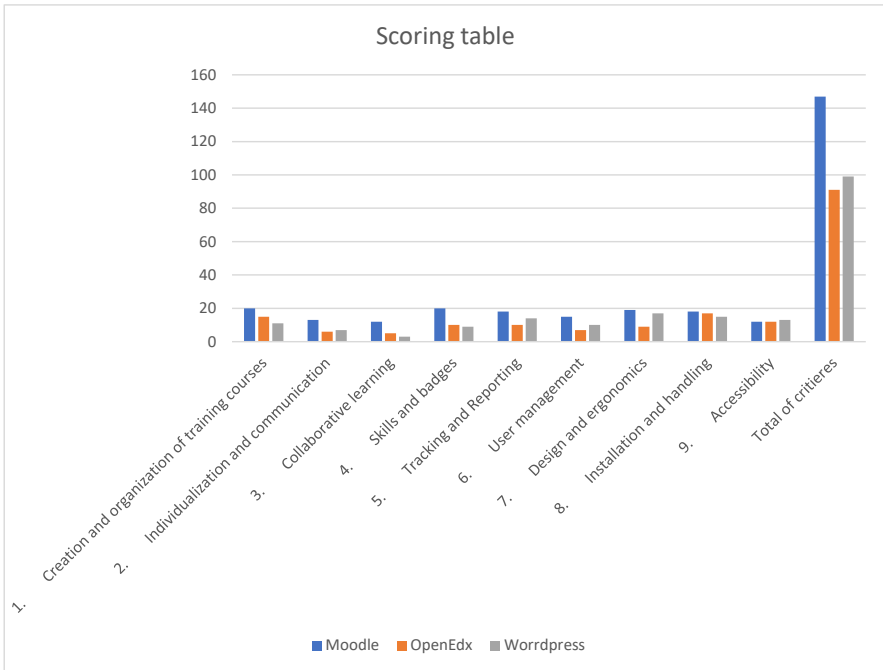
Platform		Moodle	OpenEdx	Worrdpress
Criteria and sub-criteria		Note		
Criteria	sub-criteria	Note		
9- Accessibility	Understanding links	4	4	4
	Interface compatibility assistive technology	3	4	3
	Understanding form fields using the keyboard interface	3	1	3
	using the keyboard interface	2	3	3
Subtotal		12	12	13

4-2- Summary table of the best platform :

The table presents a synthesis on the three platforms Moodle, OpenEdx and WordPress according to the nine predefined criteria, the table indicates the score of each criterion:

Platform \ Criteria	Moodle	OpenEdx	Worrdpress
1. Creation and organization of training courses	20	15	11
2. Individualization and communication	13	6	7
3. Collaborative learning	12	5	3
4. Skills and badges	20	10	9
5. Tracking and Reporting	18	10	14
6. User management	15	7	10
7. Design and ergonomics	19	9	17
8. Installation and handling	18	17	15
9. Accessibility	12	12	13
Total of critieres	147	91	99

Presentation of the results in the form of a scoring table



According to these criteria, we find that Moodle is the best platform: Total score is 147 points, compared to 99 points for WordPress (2nd) and 91 points for OpenEdx.

Indeed, in the majority of these criteria (9), Moodle won 1st place, except for the criterion: Accessibility it occupied 2nd place.

In conclusion, our choice is the Moodle platform, because it is the most efficient in all levels.

5- Discussion

Through this work, which is a comparison of the three most used platforms in the world of education and training, we have highlighted LMS by first determining their definitions and characteristics, then by clarifying the criteria of choice. of a platform and finally, from a practical point of view, by demonstrating through examples of LMS, how to choose a platform.

We have noted that the choice of criteria and sub-criteria is well studied according to e-learning experts, to the extent that situations change and the needs of users of e-learning platforms differ. Likewise, there are qualitative criteria that cannot be quantified and which enter into the choice of LMS and accentuate the difficulties of choice. Ultimately, each choice remains a choice, only we must then measure the effectiveness and performance of this choice to try to make improvements in order to approach the objectives previously determined. For the future, more serious work will be carried out on decentralized registration of users and authentication and monitoring at the level of Personalization and accessibility, Data-based decision making, Collaborative learning, Continuous evolution, integration and compatibility...

Finally, in this exploration of learning management systems (LMS) and the essential role they play in the world of education and training, we have dissected these platforms, examined their characteristics and defined the criteria for selection crucial to making informed choices. Through practical examples of popular LMSs such as Moodle, OpenEdx, and WordPress, we have illustrated the complexity of choosing the right platform and the dynamic nature of these criteria.

Conclusion and perspective

In the ever-changing landscape of technology and education, the criteria for selecting an LMS has undergone significant transformations. It is obvious that situations change and user needs continually evolve. The addition of qualitative criteria that are difficult to quantify further complicates the selection process. However, finding the right platform remains a crucial choice. Once the choice is made, the evaluation of its effectiveness and performance becomes essential, allowing continuous improvement in line with predefined objectives. In the field of online

learning, there is a significant challenge: effectively managing student progress at different educational levels. This challenge is becoming more and more complex with varied courses, subjects and student backgrounds. These challenges encompass diverse learning paths, individualized learning, data management, real-time updates, and smooth transitions between levels. To address these challenges, there is a growing demand for LMS platforms that offer automated management of student progress. The ideal LMS should incorporate adaptive learning, personalized dashboards, comprehensive analytics, and seamless transitions between levels. It is also expected to leverage machine learning and artificial intelligence to improve the learning experience.

To this end, further work is essential, particularly regarding decentralized user registration and authentication and improving progress monitoring at each level of education. Innovations in LMS platforms will likely continue to focus on automation, personalization and adaptability, all with the aim of delivering effective, dynamic and learner-centered digital education. It is a path to facilitate the transparent management of student progress and ensure that education remains accessible, engaging and scalable in the ever-changing landscape of the digital age. Ultimately, the world of e-learning is constantly evolving and the role of learning management systems is at the heart of this transformation. Making informed choices based on evolving criteria is essential for educators, businesses and institutions to deliver high-quality, inclusive and effective digital learning experiences. The future is very bright for online education, and keeping pace with advancements is essential to realize its full potential.

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