

Using Learning Management System in Distance Teaching: Thoughts of Future Teachers

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Abstract: The COVID-19 pandemic had dramatic impact on almost all aspects of human lives. Education sector was also affected. In almost all countries, schools and universities were shut down in an effort to halt the pandemic. In response to COVID-19, educators across the globe had to switch from classic to online teaching mode. Many challenges faced both teachers and students, including, but not limited to, the online platforms to use to ensure a learning continuity. The usage of the appropriate Learning Management System (LMS) raised many discussions and a widespread controversy among education professionals all over the world. In this survey study, we address some distance teaching-learning issues that emerged during the COVID-19 period from the perspective of future teachers. We report their opinions on the use of some tools and LMSs in distance teaching-learning process, and the perspectives they developed from this experience on teaching online.

Keywords: COVID-19, Distance learning, Distance teaching, Learning Management System (LMS).

1. Introduction

The widespread emergence of COVID-19 pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in early 2020 disrupted human lives [1], [2]. Its fierceness and its rapid spread among people [3], [4] in addition to the lack of appropriate medications, urged the governments to adopt several restriction measures.

In Morocco, as in almost all infected countries, the authorities imposed a total lockdown as a strategy to halt the spread of the pandemic. It was the deepest recession the world has ever known. Schools, universities and training centers were then shut down for months without knowing precisely when it would reopen. In fact, about 1.6 billion of students across the world were not attending schools during this period [5]. To maintain the learning continuity, distance learning was the proposed alternative by the Moroccan government. Online teaching-learning replaced the traditional mode without prior preparedness of both sides; learners and teachers. There was an

uncertainty on when the situation would end and when one could return to the normal schooling mode. Until now, we don't seem to be out of the woods. The concerns continue even after re-opening in the early October since the risks are out of control and many parents or institutions chose the distance learning or the hybrid mode. Distance learning allows at-home learning and it guarantees the physical distancing. As an academic model of teaching, distance learning has its promises but also raises many challenges that, unfortunately, the pandemic situation magnified [6]–[8]. Distance learning posed many challenges to students as well as to teachers and parents. Students had to move from usual classrooms monitored by teachers to virtual classes with self-paced learning mode. Parents had the charge of helping more their children in “learning” and to provide them with necessary material and services. This mode called also on teachers to rethink their teaching strategies and to adapt them to the new situation. They had to use educational materials suitable for the new environment.

In fact, in distance teaching, a teacher has to deal mainly with two components:

- The activities: As in all learning modes, that is the content to be taught and the way it should be constructed to fit the online environment and to captivate a ‘distracted student’ (In the pandemic era, almost the whole family was on lockdown at home. Noise, Lack of space, TV, etc. were disturbing factors. Besides, home is the student’s comfortable zone and it was hard for most of students to be engaged or to focus on studying in such situations). In addition, the contents should be handled; digitalized, granulated and personalized before to be delivered online.
- The technology: That is the technology needed to create educational resources and the technology needed to deliver the online teaching-learning material (media, devices, internet service, software applications or Learning Management Systems

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(LMSs), ...)

We focus here on the problem of LMS usage in distance learning during the COVID-19 crisis period.

LMS also known as the Virtual Learning Environments (VLE) or the Course Management System (CMS to differentiate from Content Management System), is a web-based technology that helps monitoring and managing online training, learning and assessment [9], [10]. It is common to use them in self-paced learning activities too [11].

Morocco, like many underdeveloped countries, does not have a well-developed structure dedicated to distance learning. Due to the COVID-19 pandemic, teachers and students had to deal with LMS, choosing the right one, managing it, without any preparedness nor official instructions on how to use it. Some of them have never heard about it.

As future teachers, our trainees were in the heart of the crisis. They had to pursue their training online and they had to get prepared to teach online if the situation had continued.

In this paper, we will address several questions:

- How COVID-19 circumstances affected teaching in our teaching institutions?
- What are our future teachers' perceptions on distance teaching-learning?
- Which LMS our future teachers picked for distance teaching-learning?
- What are the LMS features that affected positively our future teachers?
- Which conclusions can we draw from the COVID-19 aftermath in relation to LMS usage?

2. Method

We seized the opportunity of "teaching practices analysis" module, delivered during the lockdown, to undertake this research survey. We focused on the reflections of future teachers on distance learning and usage of LMS driven from their own experiences as teachers and students. This helped in gathering views and opinions of both sides: teacher and learner. 23 teacher trainees participated to this survey. At the end of each learning session, the trainees had to complete an observation matrix to describe different details and acts of the trainee in charge of the learning session. At the problematization stage, the trainee in charge had to identify the problem that needed to be addressed. Afterwards, a roundtable was usually organized to analyze the trainee's practices and to share ideas, opinions and suggestions. In addition, at the end of the module, they were invited to fill out a questionnaire about distance teaching-learning experience. This questionnaire was distributed electronically via google forms. Our aim of the whole process was:

- To urge on trainees to try more distance learning platforms.
- To develop trainees' reflexive practices.
- To determine their feedback on distance teaching-learning as well as LMS usage.

We report here the opinions of our future teachers on the distance teaching, especially in such situation as of COVID-19

aftermath, and LMS usage in the teaching-learning process. On the other hand, we address the potentialities of these LMSs.

The questionnaire consisted on several closed questions Likert-type scale and other open questions.

3. Results and Discussion

Different types of online teaching-learning modes have been adopted by the trainees. To deliver their learning sessions, the trainees used many online platforms. These platforms are presented in Table 1. The trainees were free to choose the platform they assumed to be suitable for their course.

Table 1
Online platforms used by the trainees

Online platform used	Number of trainees that used it
Google Classroom	57 %
WhatsApp	26 %
Dragon survey	4 %
Discord	4 %
Google Meet	4 %
Ms Teams	4 %

As we can see in this table, most of the trainees used google classroom (about 57% of the trainees) and WhatsApp (26% of the trainees) platforms in their teaching sessions. Other platforms were also used such as Ms Teams, Google meet, and Discord. One trainee used Dragon survey, since she was conducting an evaluation session.

From this table, we can see that all trainees opted for free platforms. This choice seems to be obvious since the pricing is a big issue to deal with when talking about a web-based environment. Actually, during the COVID-19 pandemic lockdown, most of the Moroccan teachers chose free solutions and platforms as their first preference. They are freely available and they allow fluent communication with students. Licensing fees might be a considerable burden for both teachers and students. Our trainees didn't stand out from the crowd. In fact, neither in-service teachers nor trainees received an investment. Along with the lack of financial support from any institution; they were willing to be in touch with a number, as large as possible, of students financially dependents on their parents. Parents that either were on lockdown and suffering from the economic recession or are limited-income people by nature. Therefore, the choice of freely available LMS, or even a communication application like WhatsApp, was largely governed by the financial crisis all families were living. The other issue to address here is the perception of teachers to the distance learning. While distance learning is based on specific pedagogical strategies and requires several competencies, most of teachers tended to look only for a means to communicate course material to their students. Lack of both preparedness and technical competencies lied behind this attitude. They were trying to make every possible effort to maintain the learning continuity. Many teachers and students showed their dissatisfaction. They were facing huge challenges, without instructional tutoring or supervision.

For this study and for the professional practices analysis purposes as well, we proposed to ask our future teachers, at the

end of the teaching session, if they were satisfied with the technological platform, they used to deliver their courses.

In the literature, studies about satisfaction undertook the problem from different facets [12], [13]. Interestingly, some authors, like Wanous et al. [14] and Scarpello and Campbell [15] stated that, in the case of job satisfaction, it could be assessed using a single-item measure. Here we used a single-item measure and gave our trainees the opportunity to rate their global satisfaction with their performances. A forced 4-point Likert scale has been used to express their satisfaction towards the LMS platform they used. (extremely satisfied, very satisfied, slightly satisfied, not at all satisfied). By asking the trainees to rate their satisfaction, we invited them to reflect on how the LMS was helpful in their course delivery, through all course development steps. They expressed to which extent the LMS chosen met their expectations. The results are depicted in Fig. 1.

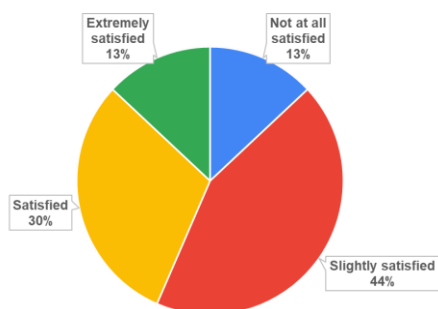


Fig. 1. Satisfaction expressed by trainees towards the used platforms

44 % of trainees were least positive to the platform they used. Platforms gave cause for satisfaction to about 13 % of the trainees. 13% of the trainees were extremely satisfied.

Another point we would like to address in this study, is the overall judgement of trainees on which the tools and LMS used are useful or not in teaching, especially in the COVID-19 pandemic conditions. This was approached by inviting the trainees to rate the platforms as very useful, useful, of limited utility, or not at all useful. The results are depicted in Fig. 2.

It seems that most of the trainees were highly positive to MS Teams (91%). Moreover, none of the trainees judged MS Teams as non-useful. They were also favorable to Google meet. 74% of the trainees judged it as very useful. About 65% considered that Google Classroom was useful. However, they were divided about the usefulness of WhatsApp in distance learning. Only 26% said that WhatsApp was useful whereas the large majority of trainees (74 %) considered it as of limited use or not at all useful.

In the aim to adopt a more robust quantitative tool to comprehend the trainees' choices and preferences, we deemed necessary to establish an LMS assessment grid. While there are many criteria matrices in the literature [16], [17], we determined our assessment criteria to conclude about the trainees' preferences and verdicts. These criteria are based on the key features an LMS should have. The assessment matrix constitutes then a measure of the usefulness of the LMS used as perceived by the future teachers. The trainees were invited to

rate each LMS by scoring each criterion:

+1: if the feature exists and enhances the effectiveness of the LMS

0: if the feature does not alter the effectiveness of the LMS

-1: if the feature does not exist or reduces the effectiveness of the LMS.

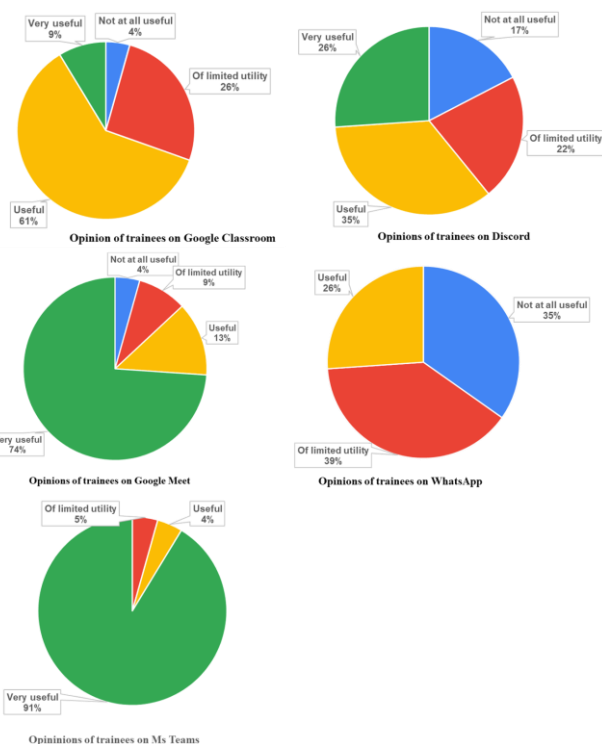


Fig. 2. Opinions of trainees on the usefulness of some distance learning platforms

The criteria we chose depict some features or functionalities an LMS should have, and essential in managing learning process, assessment, communication. So, each LMS is analyzed according to the following set of criteria:

Accessibility: describes the ergonomics of the platform. The trainee had to evaluate if the interface allows an easy access of user to different functionalities, learning materials and rubrics of the platform. In other words, a user-friendly interface.

Rapidity: describes speed of the system. That means time to access or to upload learning material and adequacy to the internet connection speed.

Messaging teacher-student: describes the ability of the system to ensure fluent communication between teacher and his/her students in synchronous or asynchronous modes.

Messaging teacher-teacher: describes the ability of the system to ensure communication and collaboration between teachers in the same or in other institutions.

Audio interaction: describes the tools provided by the system to directly talk to students for synchronous mode or record the voice in asynchronous mode.

Video interaction: describes tools that allow web conferencing, virtual meeting and desktop sharing during a synchronous session.

Interactive assessment and evaluation: that are tools or

functionalities provided by the system to allow automatic assessment of students (quizzes and other types of assessment) and evaluate their accomplishments.

Feedback on students' work: That are tools that help the teacher to provide feedback on students' works and assignments.

In the plot of the Fig. 3 below, we report the features the trainees considered as enhancing the potential of the platforms (+1).

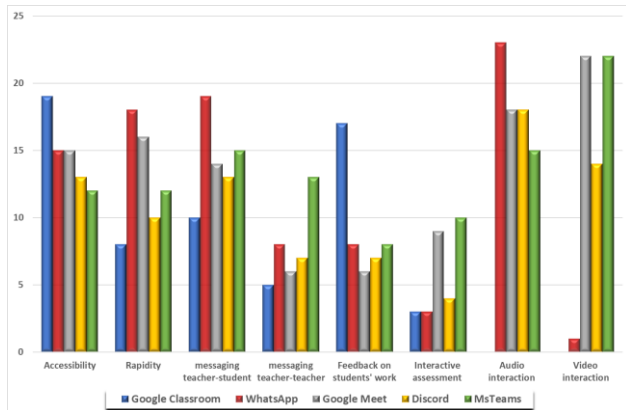


Fig. 3. Features considered by trainees to be enhancing the platforms' performances

Accessibility and rapidity are two important required features since they are related to the access to the course materials. According to our future teachers, all platforms have these features, with a preference to Google Classroom in accessibility and WhatsApp in rapidity. The platforms used have user-friendly interfaces and they allow easy access for teachers and students. Besides communication, uploading and downloading course materials are prerequisites in distance learning. During the lockdown period, there were many complaints about the reduced internet performances. The trainees asserted that this feature significantly impacted the choice of an LMS. The main objective is to avoid unpleasant disconnections and subsequent reduced audio or video quality.

From the histogram of figure 4, we can say that MS Teams provides all features discussed and they are all assumed to be enhancing the effectiveness of MS Teams and conveys the proclivity of teachers for this LMS.

It seems that there is a consensus about three points:

- The audio features provided by WhatsApp,
- the video conferencing tools provided by MS Teams and Google Meet
- and the absence of the audio and video tools in Google Classroom.

While the audio and Visio-conferencing enhances the potential of both MS Teams and Google meet, the lack of these features in Google Classroom reduces its effectiveness. It affects also the platform's attraction of teachers.

It is crucial to engage students in the course, especially in distance learning. It is therefore common to implement interactive activities to successfully achieve this students' engagement. Thus, it is essential for an LMS to incorporate

good communications system. Using audio or video tools is considered to be much better than the use of chatting or text messaging. Our students become more visual learners and educational technology must satisfy the students' needs. And deficiency of these tools in Google classroom absolutely alters its effectiveness.

At the same time, WhatsApp owes part of its popularity among teachers to the audio features it provides. "It makes engaging students easier. I can talk to my students, explain and discuss course subjects with them. I proceed by recording my speech and send it to students, and they will do the same to ask questions or to answer mine using a simple tool: a smartphone" Stated a teacher. For some trainees, the audio feature provided by WhatsApp is not really helpful since it does not allow a synchronous communication or live conversation with a group of students as large as a normal class. A live conversation is limited to five persons. It is time consuming and leads to ineffective communication in a platform already lacking in other course management features. It might hinder an enduring dialogue with students during the course. It is a multi-step communication process: recording the speech, sending it, listening to it and responding. In addition, this contributes to the students' disconnection and absenteeism. In fact, communication is a pillar of any educational experience. When there is a problem in the channel of the communication, we might confront a collapse of the system.

Course management in distance learning represented a key issue for teachers in such situation as of COVID-19 crisis. In fact, there has been a tendency among teachers for using audio and Visio-conferencing tools. It made the courses more engaging and interactive. Moreover, teachers didn't have to rebuild and reorganize their course contents. The fact is that they were more leaning towards a traditional live course that is delivered online. They were in a need of computer-mediating tool to replace in-person delivery by online delivery They were not prepared and they should ensure the learning continuity.

Many teachers lack the knowledge of using the LMS in a proper way. Generating a course material suitable to an appropriate LMS represents the first challenge. They have never been trained on LMS usage.

"Assessment is intrinsic to any learning process [18], [19]. It helps effectively the teacher in making judgments about learners' performances and in making right decisions. It helps also the learners to be active in their learning. Therefore, it is so important for a teacher to have functionalities helping him/her in the assessment process: Assigning, scheduling and grading the tests and quizzes. And, in the case of online teaching, interactivity becomes highly required", asserted our trainees.

Indeed, MS Teams provides assignment tools so one can create quizzes, send them to students or schedule them for an upcoming date. But one actually need to have an academic account in order to get access to the quiz tools. Thing that was unavailable at the time of the pandemic crisis. An alternative the trainees suggested was the use of google forms even with its limitations in either grading process or sending feedback on students' works. Our trainees complained about the lack of assessment tools in the WhatsApp platform. "Even though it is

fast and accessible, it is inappropriate for learning because it will, in no way allow evaluating the progress of learners" stated our trainees.

WhatsApp incorporates widely different features since it was mainly developed for purposes other than education. But teachers favored it because of its popularity and almost all students master using it. "It is so simple in use and it does not require high proficiency".

"Discord is essentially designed for gaming and chatting. Yet, I used it because it offers many features as audio conversation, screen sharing, file sharing. The students have the possibility to share their screens too. I could manage the students' interactions and monitor their activities. For the assessment, I had to use other alternative" asserted one of our trainees. However, some of his colleagues found that it has many gamer-focused features making it difficult to handle by a teacher. It might be also a source of distraction for students from the main purpose of studying.

To explore the future teachers' perspectives, we asked them, through the questionnaire, if they think they would be able to teach online. 4 options were then proposed: (Absolutely yes, Rather yes, Rather no, Absolutely no). We report the results in Fig. 4 below.

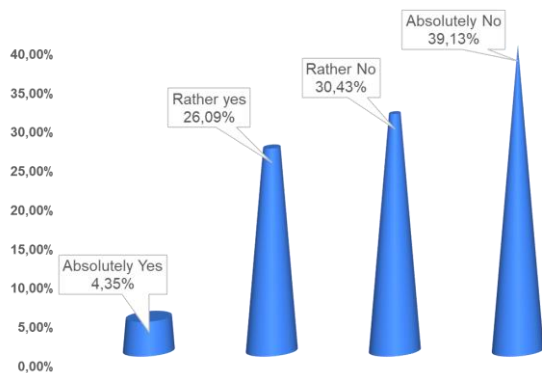


Fig. 4. Prospects of future teachers about teaching online

It is clear that our future teachers are nowise enthusiastic about teaching online mode. The majority (69 %) of teachers asserted that they would not teach online (39 %, absolutely not and 30 % rather no). During the organized round table, the trainees revealed many issues, specifically pedagogical issues related to the difficulty to engage learners due to the lack of immediate interaction between learners and teacher. "I would prefer to be with my students face-to-face, to give them immediate feedback" declared many teachers. The infrastructure represents also a big issue. "Since the policymakers are not acting promptly and not spending money to install the appropriate infrastructure, I don't think we will be able to teach remotely". Another trainee stated that "I would rather teach online in a hybrid mode". Indeed, in addition to the preparedness of teachers to change their teaching strategies, improving the infrastructure is a mandatory requirement for online teaching.

4. Conclusion

During the lockdown caused by COVID-19 pandemic and the school's shutdown, the educational strategies underwent big changes not only in Morocco, but all over the world. Teachers, trainees and students experienced many difficulties in pursuing their classes normally. Distance learning was then the only teaching mode offered for nearly all Moroccan teachers to maintain the learning continuity. And this posed many challenges and obstacles to teachers, parents and students. As part of their initial training, and during the "teaching practices analysis" module, the Moroccan future teachers learn how to develop reflective practice. They are urged to analyze all aspects of their practices. They are prompted to act upon this analysis to improve their practices and to adapt their teaching to a particular context. In this investigation, we focused on the usage of LMS in distance learning during the period of COVID-19.

Pedagogical and technical problems arose. In fact, many teachers, without preparedness nor a training on distance teaching, were looking for online solutions that satisfy the instant needs of their students and their curricular and course goals. The lack of an official supervision and a conceptual clarity with regard to distance teaching exacerbate the situation. For many of them, the pedagogical approach was to deliver the courses as in normal classrooms via an online application. They needed then computer-mediated communication tools rather than a well-established LMS. Many families were struggling with the economic collapse's consequences and were unable to afford distance learning costs. It was difficult for many of them to provide the children with necessary material resources (Computer, tablets, smartphone, internet access, ...).

Among many LMS features, the audio and video functionalities have been identified as very relevant and hence attractive to teachers. Communicating with the students synchronously, through voice protocols or video-conferencing makes distance teaching-learning process more engaging and more interactive. The teacher is delivering its course while his students; from their homes, hear, see the teacher; ask and answer his questions. It is considered to be more practical, convenient and time-saving than text messaging with students.

Distance learning implies a certain student autonomy. Unfortunately, the COVID-19 circumstances revealed that our students are not autonomous in their learning and they depend entirely on their teachers. Moving from the traditional classroom to the distance learning created a challenge to students and their teachers too. Most of in-service teachers, and future teachers, as we proved in this study, show considerable reluctance to distance teaching-learning.

Parting from the idea that assessment is an integral part of teaching-learning process in any educational mode or environment, the trainees emphasized on the importance of the assessment functionalities offered by LMS. To be effective, an LMS should provide tools that allow assessing students' progress, grading as well as giving feedback on students' work. Usually, feedback given by the teacher on students' work constitutes a source of motivation for students and a restart point for the future learnings.

The lessons we can learn from the COVID-19 aftermath is that there is a need for the policymakers to reconsider the educational strategies to be better prepared for uncertain circumstances. Distance teaching-learning has many advantages. One can effectively take advantage of its assets in a hybrid teaching mode. This would be successful if institutions provide the appropriate infrastructural resources and equipment (computers, tablets, internet access, ...) and teachers have the required technological competencies. A good training on ICT and all opportunities they offer to innovate, improve student's learning experience and enhance educational quality, should be delivered to the future teachers. Undoubtedly, a training on distance teaching, LMS and online pedagogical strategies is compulsory. In-service training is strongly recommended to allow teachers keeping up with changes, thus paving the way to an enhanced educational system that meets the needs of an evolutionary society.

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