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The Reason behind the Weakness of the Communication Process between Teachers and Students in E-Learning in Algeria

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Abstract:

Our paper is heading towards an unexplored area in Algeria. It is the technical method of courses; our hypothesis was that the courses may not meet the standards of e-learning, which weakens the communication process. Given that the course in e-learning is a design, this design is the least necessary to establish this process of communication. Indeed, after the examination of open courses and after applying the basic criteria that must be available in e-learning courses, i.e., the three systems: the entry system, the learning system, and the evaluation system—which are recommended by the ministry of higher education and what the platform of Moodle supports for "dynamic learning" to increase communication—we note that the sample courses are far from the standards of the three systems, with some differences in the results of the three systems: For the entry system, the majority of courses do not have an entry system; concerning the learning system, the majority of courses have it but remain very low; as for the evaluation system, the overwhelming majority do not have an evaluation system.

Keywords: E-learning ; Moodle ; Communication process ; Courses; Three systems.

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E-learning will be an alternative, due to the steadily increasing number of students and the lack of pedagogical facilities, as well as the lack of supervision. The number of students in 2019 was close to 2 million; this number is expected to rise to 3.5 million students in the horizons of 2030, according to the minister of higher education[1].

As for the number of teachers, it currently reaches 60,000[2]**.**That is, an average of 33 students per teacher. With the recent recruitment of teachers, this average decreased to 22 students per teacher this year (2023). This requires, if we want to maintain at least the same current ratio, at a rate of 22 students per teacher, employing teachers, and establishing new structures. This last is the biggest challenge because it needs money and time. Especially considering the lack of funds for the higher education sector even during the years of financial prosperity[3].

Since the e-learning is one of the most important goals for the Ministry of Higher Education in Algeria[4]. "Moodle" is among these means used in e-learning. This platform is of great importance because, on the one hand, it is accredited by all Algerian universities; on the other hand, it was the most used platform during the pandemic. According to a study conducted during the pandemic, "the majority of teachers in all fields of education used the platform that was set up as an alternative to traditional education.[5] ", researchers confirm.

The study of Hassina Ahmid, who used the method of survey and approached the subject from the point of view of teachers, based on their satisfaction with the training reserved for new recruit teachers at the Mohamed Lamine Debaghine Setif2 university, affirmed that teachers expressed high satisfaction with the training they received[6]. Another study revealed that technical work conditions and the teachers work environment, although there were some problems, they were generally acceptable and concluded that there is a weakness in the communication process using this platform[7]. Besides, A study on the satisfaction of students concluded that there is difficulty in communication with teachers and supervisors[8].

Two observations that can be highlighted from these different studies: on the one hand, the studies confirm that the material conditions and the environment were acceptable for teachers, but on the other hand, it raises the weakness of communication between teachers and students, which incites some to affirm that traditional teaching is better or even to judge the ineffectiveness of e-learning.

For us instead of judging the effectiveness or not of e-learning, we should seek the raison of the weakness of the communication, and the question that arises here

is: What's the reason behind the weakness of the communication process between teachers and students?

According to the Ishikawa diagram (cause-and-effect diagram), to identify possible causes for a problem, we should explore the different factors such as manpower, material, environment, and method[9]. Given that the manpower, material, and environment have been explored in the precedent studies that confirm that the material conditions and the environment were acceptable for teachers, and others that demonstrated that the teachers expressed high satisfaction with the training they received as mentioned above. Yet the methods by which we present the educational courses aren't explored.

Since the teachers are trained and are satisfied with their training, and their material conditions and work environment are acceptable, our hypothesis is heading towards an unexplored area in Algeria. It is the method: the courses may not meet the standards of e-learning, which weakens the communication process. In particular, the course in e-learning is a design, and this design is the least necessary to establish this process of communication.

Our hypothesis is that the courses may not meet the standards of e-learning, which weakens communication. The condition of courses meeting the standards is the least necessary to establish this process of communication.

In order to answer the question and verify our hypothesis, we should first define e-learning, the Moodle platform, and the minimum conditions to establish a communication process between teachers and students on this platform (three systems) adopted by the Ministry[10].Then we compare the courses with standards. So our work is to evaluate the courses based on the three systems. As "evaluation in the strict sense of the term, is a value judgment that is based on the results of a data comparison materialized following a measurement with criteria and standards[11]".

We have developed a "method of verification" based on the three systems for a good structure of courses. This is what the platform of Moodle supports for "dynamic learning" to increase communication. Then we have chosen a number of courses (164), intended for first-year undergraduate students in law and political sciences, common core, taken from different faculties of law and political sciences (11 faculties), chosen according to their open access.

The Algerian university network today reaches 63 universities and university centers[12].We took 11 faculties from these university establishments, for a percentage of 17, 46%, which is representative. These establishments are from different academic regions (Center, East, and West) and different geographic regions (North, South, East, and West).

We examine the courses and evaluate them according to the three systems, as you can see below in table N°1.

Table 1 The three systems model

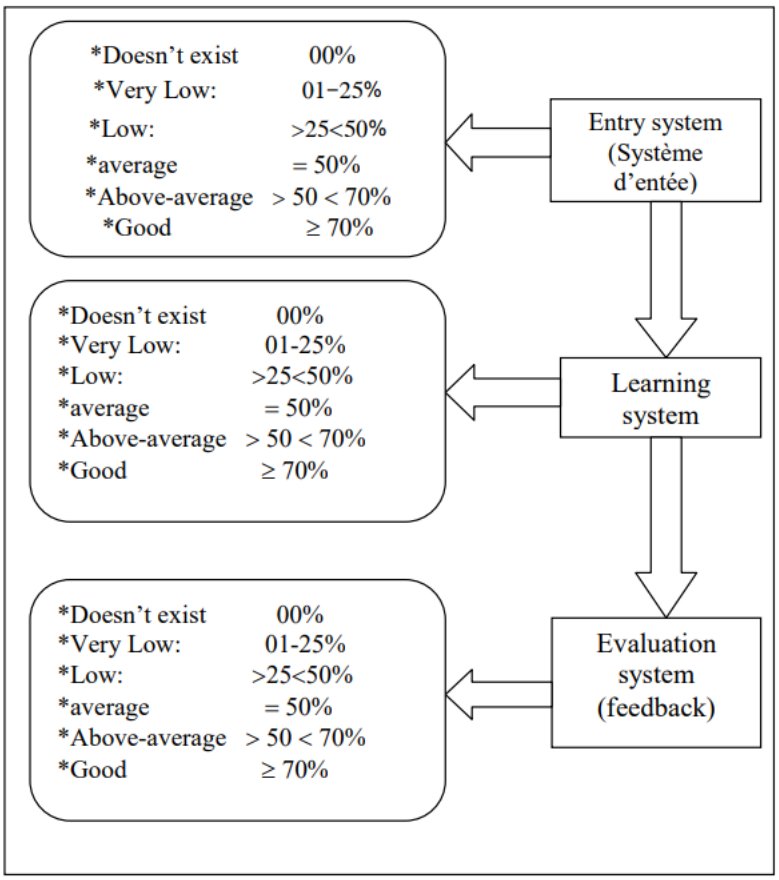
Entry system: 100%	Percentage
✓ Course title and information about it	05%
✓ Course abstract	02%
✓ Pedagogical objectives	10%
✓ The prior acquisitions (prerequisites)	05%
✓ The prior acquisitions test	13%
✓ Evaluation method	05%
✓ Course plan	15%
✓ General plan - scenario	20%
✓ Information about the teacher	05%
✓ Information about the method of contacts	20%
Learning system: 100%	Percentage
✓ The lesson is in web format	03%
✓ The lesson is in PDF, Word format,	03%
✓ The lesson is in audio-visual format	10%
Activities and Resources following the lesson:	
✓ Individual assignment or test :	13%
✓ Group work –wiki,workshop or assignment	22%
✓ Resources: articles, images, videos, books, Glossary, documents,	05%
✓ A forum or chat for discussion about the lesson	22%
✓ Survey (feedback)	22%
Evaluation system: 100%	Percentage
✓ Global test:	40%
✓ Support for revision	20%
✓ Survey about the whole learning process	40%

Source: Our proper design

We know that there are elements that are more interactional than others and more important than others because they contribute to increasing assimilation and rising communication. That's why we give a "value" to an element according to its importance and its role in increasing communication in each system. That's why we give a "high value" for the more interactional elements in each system (elements in green). Table N°1.

To interpret the results of the value of communication in each system, we classified the results into categories: Doesn't exist 00%; Very Low: 01-25%; Low: >25- <50%; Average:=50%; Above-Average: >50< 70; Good: ≥ 70. As you see below, Fig. n°1.

Figure 1. Interpetation of pourcentage in each system



Source. Figure1, Our proper design.

So we define e-learning, the Moodle platform, and the minimum conditions to establish a communication process between teachers and students on this platform (three systems), then we expose the results obtained from the application of our method of verification explained above, and then we discuss the results.

1. The e-learning communication

We refer to a recent study that defined communication as "the act by which a person transmits or receives from another person information about knowledge, needs, desires, and perceptions, among others. The communication process presupposes the sharing of information between at least two actors: the sender, who encodes and transmits the message, and the receiver, who decodes and receives the message[13]".Another definition clarifies more the elements of

communication by defining instructional communication as "a joint interaction process that takes place in verbal and non-verbal language between the teacher and the learner, where the teacher provides educational experiences (cognitive, skillful, and emotional) through appropriate channels for the purpose of achieving satisfactory educational results. [14]".

Among the characteristics that must be present in the message are: "stimuli that help attract attention; to be presented in an interesting and unconventional way; to allow students to participate effectively.[15]" That's why the method and means of sending a message are so important in instructional communication; the same is true for feedback, which is a distinctive character of modern communication[16], and this what should exist in the e-learning nonconventional and modern way of learning.

We use different terms to qualify this kind of learning as "distance education" or "distance learning." According to "Britanica" it's a "form of education in which the main elements include physical separation of teachers and students during instruction and the use of various technologies to facilitate student-teacher and student-student communication.[17]", then the main thing that led to describe this kind of education as distance is "the physical separation of teachers and student", but this is existed in traditional forms "learning by correspondence", the terms "e-learning, "online learning" are more likely to describe the new kind of learning than "distance", to avoid confusion because electronic communication have shortened the distances, sometimes we call it "Digital learning" which refers to this development in the using of information and communication technology (ICT) in this kind of education.

In Algeria, we started working on this education in 2003, but the use of information and communication technology is still modest, so the Ministry of High Education accredited some online Masters, such as at the University of Constantine1, which for the academic year 2016–2017 obtained a license from the Ministry to open 5 masters, including a master's in law[18]. Furthermore, it gives great importance to this education and has put training for teachers about ICT, the platform of Moodle included.

What's Moodle?

2. Moodle platform and the three systems

We will introduce the Moodle platform, and then we will discuss the three systems that help teachers have a good design of courses and good communication with students.

2.1 Moodle:

It is an educational platform designed to provide teachers, administrators, and learners with a single, powerful, secure, and integrated system for creating a learning environment[19].Among its objectives is also one of the United Nations Sustainable Development Goals: "creating a more equitable world where everyone can pursue a quality education.[20]".

Martin Dougiamas was behind the Australian company; he wanted to introduce a new philosophy in education that makes it possible to create learning communities around content and activities, and this is what the name of the program indicates by the late 90's: "Moodle" means (Modular Object-Oriented Dynamic Learning Environment)[21].

Moodle in its LMS and application component has undergone several improvements, including the latest version, Moodle LMS 4.1, dating back to November 2022.

What interests us here is Moodle LMS (the platform), not the application; this last is a way to access the content of the Moodle LMS site.

The design of the Moodle LMS gives us the opportunity to build our courses online and to increase communication between teachers and students by Synchronous or Asynchronous learning.

Although this platform is different from one institution to another, it generally contains the elements that make it possible to build a course module according to the three systems, as the MESRS recommended.

2.2 Three systems:

The three systems are those that were adopted by the Ministry of Higher Education and that have been the heart of the training intended for teachers over the last few years. Accompanied by a guide from the Sectoral Commission for the implementation and monitoring of distance education in higher education establishments, this guide was edited by Ahmed Belhani. This guide can be found on the websites of universities[22].We have just synthesized them into a model to facilitate evaluation. These three systems are:

2.2.1 The entry system:

It consists of the following elements:

a. Course title and information about it: it's necessary to put first of all the title of the course and information about it, like the category of the course, e.g., fundamental, Horizontal, credits, coefficient, and all other information describing generally the course (05%) of the entry system.
b. Course abstract: The main idea, or a short text of a long text, (02%) of the entry system.
c. Pedagogical objectives: The general objectives sought from the courses, that is, the goals that the teacher or lecturer wants to reach, are represented

in what the students could acquire from lessons or lectures. A student who knows the objective of what he is going to do will be more motivated than a student who doesn't know the objective of what he is going to do. This gives the student more chance to understand and to be in synergy with the teacher (10%) of the entry system.

d. The prior acquisitions (prerequisites): The acquisitions that students obtained before are necessary to follow courses and lectures, to inform students about what is necessary as acquisitions to assimilate the course, and if necessary, to make an effort to upgrade. It takes (05%) of the entry system.
e. The prior acquisitions test: The prior acquisitions test is more interactive because it allows students and teachers to know about the relative acquisitions of students and verify the prior acquisitions in order to make an effort to upgrade, if necessary. This takes 13% of the entry system.
f. Evaluation method: The teacher should cite the method of evaluation; it helps students to know about the evaluation of their assimilation of the course and the competences that they should acquire. This takes 05% of the entry system.
g. The course plan is a table of contents for the course. It's important to show students the content of what they are going to do, because this contributes in having a sight and also helps in memorization. That's why it takes 15% of the entry system.
h. General plan and scenario: The general plan is important, and the scenario is more important. The first one shows the student the map and the path that should be followed in consultation with the course, and the scenario gives more details because it shows well how we do it, what we do exactly, and when. The teacher could present a general outline of the sequence of lesson through its various axes, i.e., the scenario that takes place in them[23], and it is advisable to use programs for that, such as VUE (Visual Understanding Environment) or Freeplane. This takes 20% of the entry system.
i. Information about teacher is so important that's why it takes 05% of the entry system.
j. Information about the method of contact: It's the most important because it increases communication and ensures that the teacher is ready to help students understand anything ambiguous and to resolve any problems they may face during the learning process. That's why this element takes 20% of the entry system because it increases communication and reassures students that the teacher will take care of them. So we should find a real expression to incite and motivate students to contact the teacher, and not just an email, phone number, or other.

2.2.2 The learning system:

Here there are three parts: the first one is for the course, the second one is for the resources, and a third part is for activities, i.e., the various activities related to the course.

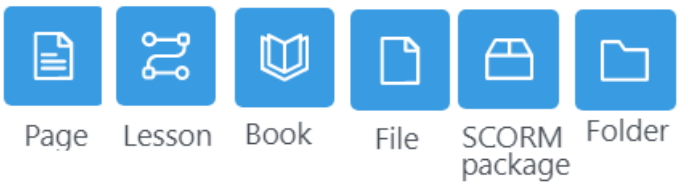
A. The course:

It consists of the following elements:

a. The lesson web format
b. The lesson PDF,Word format,etc.
c. The lesson audio-visual format

The course consists of a series of lessons, and we must include various formats for each. We give the course's writing format 3% because it is basic and traditional, but if we added an audo-visueal format, it would become more interactive and communicational. That's why this former, it takes 10% from the total percentage.We can start with the option of "Page" see Fig. 3; this enables the teacher to display the lesson abstract; then we put the course label "Lesson" with the name of the course; afterwards, we can create a web format with the option of "Book" or the option of "SCORM Package", see Fig. 3; this format can be obtained through auxiliary programs, such as Opale version, it is used mainly to produce a SCORM copy or web copy; a compressed folder can be downloaded and unzipped for viewing; this enables us to move between its elements; it looks like a website page, and this gives us an opportunity for those who are not competent in website design to build a WebPages course by using this type of software (Opale), but the use of the "Book" option on Moodle is more flexible, and rapid. The "Book" allows the teacher to display a number of files related to each other in one folder (web version). Then we can add a PDF version, and it is placed by choosing "File".

Figure 2 Course presentation

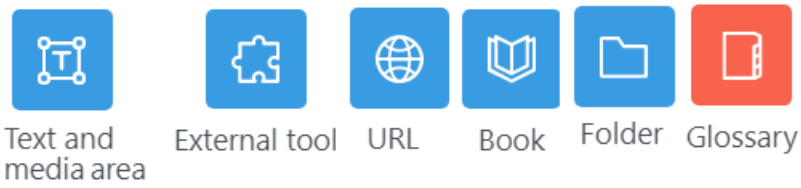


Source : Our own design relies on the Moodle platform of Soukahras University.

B. Illustrative resources for the course

This section contains the various resources that can be added to the course, and it contains many multimedia elements (web links, images, sounds, videos, files, books, etc.), as shown in Fig. 4. These resources can be additional readings, as well as different media that can be added inside the course using the option of media, which gives a more dynamic lesson, or an external tool such as the URL, book, folder, or external glossary (see Fig. 4).
We give to additional sources, 05% of the learning system, because this is what characterizes the new learning through the platform of e-learning, and we should exploit it.

Figure 3 Resources



Source : Our design is based on Soukahras University's Moodle platform.

C. The activities

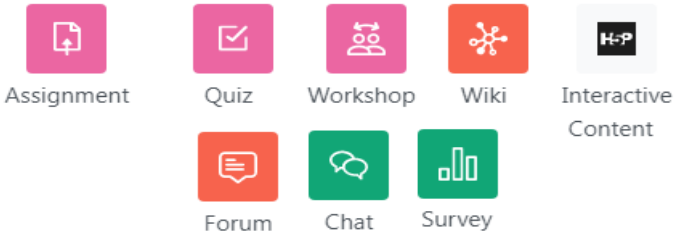
It consists of the activities and resources following the lesson:

a. Individual assignment and test
b. Group work (wiki or workshop, assignment)
c. Additional resources: articles, images, videos, books, glossary, documents

An activity is usually something a student does and interacts with other students or between them and the teacher. Some activities enable students to interact with predefined content. In doing so, they may receive feedback, search for certain information, take tests, assignments, etc., depending on the type of activity. Students could contribute directly or indirectly, and often those activities are related to the lesson provided by the teacher (Fig. 5). We give to the individual test and assignments 13%, and for the group work (wiki or workshop, assignment) 22% because they are more interactional and more communicative; the same is true with discussion (forum or chat). The survey is also important because, on the one hand, it allows teachers to communicate with students; on the other hand, it gives information about the satisfaction of students, so we can correct anomalies

as soon as possible. That's why we give to this topic 22%. We note here that we can get these different elements in a more interactive format by using the format H5P. See, Fig.4.

Figure 4. Activities



Source: Our own design relies on Soukahras University's Moodle platform.

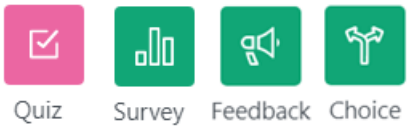
2.2.3 Evaluation system (Feed-back)

It consists of the following :

a. Global test
b. Support for revision
c. A survey about learning and the whole learning process

This part of the course (the evaluation system) on one hand helps in evaluating students by putting them through a global test, and on the other hand, it allows teachers to evaluate the extent of achieving the objectives of the course, the extent of students'learning, and their achievement of the required results. Evaluating the educational process with all its elements involves building different final evaluation activities that provide feedback. It helps also identify weaknesses and work on them by using the options (feedback, choice, survey); see Fig. 4. There are pre-existing surveys.

Figure 5. Evaluation (Feed-Back)



Source: Our own design relies on Soukahras University's

Moodle platform.

3. Results and discussion

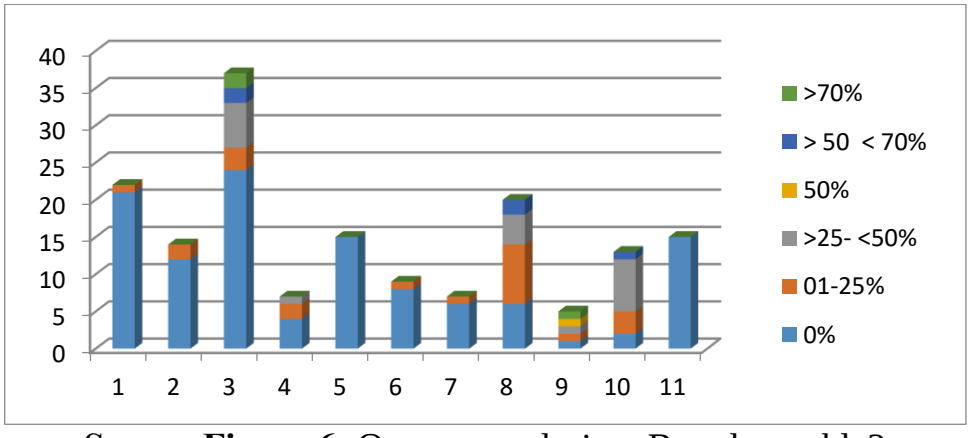
After we have examined the courses: (164 courses), according to the three systems, taken from some faculties of law and political sciences; (11 faculties), chosen according to their open access; these faculties represent a percentage of 17, 46% of the whole university establishments, from different academic and geographic regions, which is representative. We obtained the following results:

3.2For the Entry system

The majority of courses do not have an entry system; this represents 69.51%, followed by courses whose entry system was very low, at a rate of 13.41%, then low 11.65%, then above-average 3.04%, then good 1.8%, and finally average 0.60%, see Table 2 and Fig. 6.

This indicates that the entry system is not a prevailing system but rather represents an exception for some actors who are distinguished from others despite their small number. So, how can we enter the communication process without an entry system? If we know that in any work, the entry system is considered important because it is the gateway and also considered the interface to what comes after, as we have seen, it contains elements that are useful in the communication process and in understanding the content and goal of the course, as well as the map and scenario that the student follows.

Figure 6. Percentage of Entry System in each faculty



Source Figure.6: Our proper design. Based on table2

Table 2. Entry System

	Entry system						
Faculty Number	**Total number of courses**	**00 %**	**01-25 %**	**>25 <50 %**	**= 50 %**	**> 50 < 70%**	**≥70 %**
1	22	21	1	00	00	00	00
2	14	12	2	00	00	00	00
3	37	24	03	06	00	02	02
4	7	04	2	1	00	00	00
5	15	15	00	00	00	00	00
6	09	08	01	00	00	00	00
7	7	06	01	00	00	00	00
8	20	06	08	04	00	02	00
9	05	01	01	01	01	00	01
10	13	02	03	07	00	01	00
11	15	15	00	00	00	00	00

Source: Table2. The faculties's Moodle platform[24]

3.2 Concerning the learning system:

Although a learning system is present in most courses, it is very low—67,68% of courses have a very low learning system, while 22.56% of courses have no learning system and 9.75% of courses have a low learning system.

What can explain why the majority has a very low learning system is that because these courses have not left the traditional method, putting "polycopiés" handouts online is not called e-learning but rather "e-handouts." Moodle gives us the opportunity to communicate even with those who do not attend the lecture through the activities in the three sections that we mentioned. Placing a PDF file on the platform is not called e-learning but rather "e-handouts." There are many things that have not been exploited, which at least theoretically allow communication with students. There are certain options that even allow easy monitoring of students, as we explained previously.

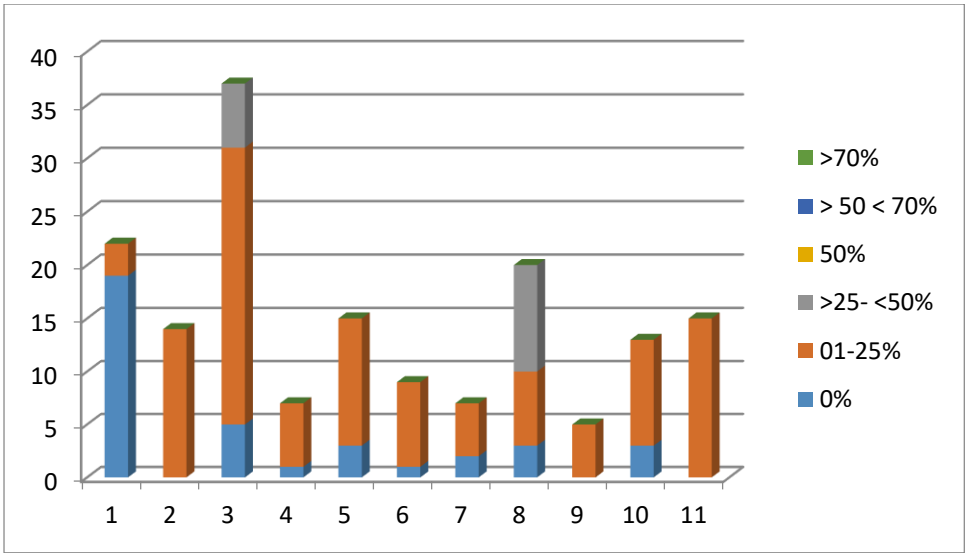
On the contrary to the entry system, here there is not the rare minority whose learning system is good or even middle; there are some attempts, but they remain at a low rate. This indicates that the learning system is not a prevailing system, and the traditional "e-handouts." prevail. see Table3 and Fig.7.

Table 3. Learning System

	Learning system						
Faculty number	**Total number of courses**	**00 %**	**01-25 %**	**>25- <50 %**	**= 50 %**	**> 50 < 70 %**	**≥70 %**
1	22	19	03	00	00	00	00
2	14	00	14	00	00	00	00
3	37	05	26	06	00	00	00
4	07	01	06	00	00	00	00
5	15	03	12	00	00	00	00
6	09	01	08	00	00	00	00
7	07	02	05	00	00	00	00
8	20	03	07	10	00	00	00
9	05	00	05	00	00	00	00
10	13	03	10	00	00	00	00
11	15	00	15	00	00	00	00

Source: Table3. The faculties's Moodle platform[25]

Figure 7. Percentage of Learning System in each faculty



Source Figure.7: Our proper design. Based on table3

3.3 As for the Evaluation system :

What we found about the evaluation system is that it looks like the entry system; the majority of courses do not have an evaluation system, as the total number of courses is 164, and the total number in which there is no evaluation system is 155, or 94.51%, which is more than what we found in the entry system; the

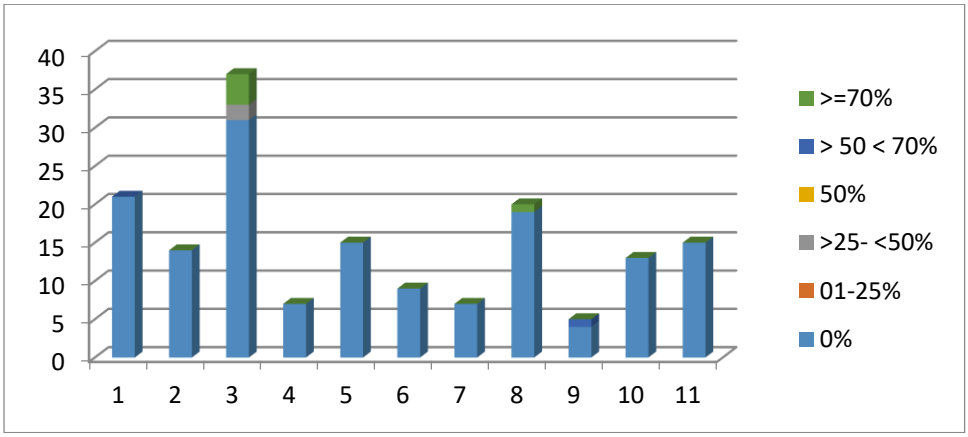
overwhelming majority do not have an evaluation system. We know that this part of the course is no less important than the other parts. There are a rare minority of courses whose evaluation system is good, but as we said above, they are the rare minority that confirm the rule (courses without an evaluation system); see Fig. 8 and Table 4 below.

Table 4. Evalution System

		Evaluation system					
Faculty Number	**Total number of courses**	**00 %**	**01-25 %**	**>25-<50 %**	**= 50 %**	**> 50 - < 70 %**	**≥70 %**
1	22	21	00	00	00	00	01
2	14	14	00	00	00	00	00
3	37	31	00	02	00	00	04
4	07	07	00	00	00	00	00
5	15	15	00	00	00	00	00
6	9	09	00	00	00	00	00
7	7	07	00	00	00	00	00
8	20	19	00	00	00	00	01
9	5	04	00	00	00	01	00
10	13	13	00	00	00	00	00
11	15	15	00	00	00	00	00

Source. **Table4.** The faculties's Moodle platform[26]

Figure 8. Percentage of Evaluation System in each faculty



Source Fig8.: Our proper design,based on table4

Conclusion:

After the examination of existing courses and after applying the basic criteria that must be available in e-learning courses, i.e., the three systems: the entry system, the learning system, and the evaluation system, we note that the courses are far from the standards of the three systems; either compliance with the standards of the three systems, with some differences in the results of the three systems: For the entry system, the majority of courses do not have an entry system; concerning the learning system, the majority of courses have a learning system but remain very low; as for the evaluation system, the overwhelming majority do not have an evaluation system.

There are many things that have not been exploited, which at least theoretically allow communication with students to be established. There are certain options that even allow easy monitoring of students, as we explained previously. Moreover, we have just evaluated these courses.

In terms of what must exist, the least necessary (the technical side). To improve e-learning communication, we should go beyond the least necessary, i.e., to raise the quality and form of content to be more attractive and more interactive.

We should also reconsider the name to qualify this type of learning; the name that exists to qualify this type of teaching is not adapted to reality. When we say distance teaching in opposition to traditional teaching, this is not quite correct, because in some cases, we can be closer to the student in virtual space than in physical presence, especially if the lecture halls are not well equipped. In addition, students sometimes cannot see or listen, whereas when teaching online, this problem is rare because companies are known for their insatiable search to satisfy users of their applications or platforms. Furthermore, we are witnessing a phenomenon every day in Algeria that is increasing year after year: “little presence in traditional classes in public institutes and universities in Algeria." We should ask the question if the fact that students cannot see or listen, given their large number, is the reason behind this.

This does not mean that there are no shortcomings in the e-learning platform itself, but they can be overcome sometimes by updating the used version as any other application or platform, as well as the necessity of diversifying the spaces of learning, for example, using social networking sites such as YouTube, which allow displaying long videos, and using web links on the platform. Especially that social media play a role in constantly growing. A recent study showed that during the period of the Covid19, students widely used social networks to get lessons and supports for revisions[27].

So, the shortcomings in the platform do not make us judge it in advance and say that it is an unsuccessful education. E-learning is on the way to being established.

We end our conclusion with these suggestions. We hope that will be taken into consideration and resonate with every specialist in his field.

Propositions:

At the university level:

We have to register students in online courses like we do for university registration so that they will be automatically registered, so we block the way in front of students who complain that they do not know how to register and that it's an easy operation.

We appoint an administrative agent who will be responsible for electronic teaching, and we train him for this reason. He is the one who supervises the registration of students and the one who responds to technical problems that students may encounter; he is a relay between teachers and students.

Establish a teaching module or a small training course lasting a few days, compulsory for each student, which is called "Information and Communication Technology" (ICT). This module or training should only contain what is necessary for students, i.e., informing them about different platforms and how to use them.

Providing continuous training on the ICT and on different platforms for all actors, training must be the prevailing culture, whether they are teachers, administrators, students, or even those who supervise this training, that is, taking into account every development of one of these actors.

Establishing large computer rooms (at least 500 devices) or medium ones (at least 250 devices for each one) is necessary so that students can use them for several uses, including research, e-learning, and e-exams. This can also eliminate, at the current stage, the problem of the lack of generalization of the Internet that arises and creates inequality among students. Moreover, it helps in the possibility of conducting e-exams in a short time and obtaining the results of the exams instantly, which gives the administration the opportunity to reduce the financial expenses of exams as well as the proper management of human resources (teachers, employees, etc.) and time as well.

Creation of a ranking for electronic education at the national level to encourage faculties to compete.We can take our model of evaluation; we can even convert it in an electronic evaluation model. But we should note that our model take in consideration just the least necessary (what should be exist technically) and not the form quality, for that we need more developed model, by which we evaluate the content and its form, which is much more targeted.

At the ministry of higher education and other ministries level:

Communication and telecommunications companies, mainly ATM Mobilis, give free access to social networks, (even though they have no credit on their

smartphones). Could we do the same thing for higher education sites and platforms, thus putting an end to the inequalities between students themselves and the inequalities between teachers and encouraging electronic teaching?

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