

# MOODLE platform as a didactic support for the English language skills improvement



Plataforma Moodle como soporte didáctico en el mejoramiento de las destrezas del Idioma Inglés

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#### Abstract.

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**Introduction:** higher education has experienced a number of changes in the teaching field due to the current situation. In this context, e-learning through educational platforms has taken on great value in the teaching-learning process. **Objective:** to apply an educational intervention through the Moodle platform to consolidate the skills of the English language in the students of the industrial maintenance career of the Escuela Superior Politécnica de Chimborazo during the special period April-September 2020. **Methodology:** this investigation was carried out in the context of mandatory teleworking due to the Covid-19 pandemic. This mixed research had a descriptive approach with a quasi-experimental focus. To achieve the main goal, 70 students from the third semester took an active part in it who were divided into two study groups: the control group and the experimental group, with 35 students respectively. Before the intervention phase, information was collected through a survey which yielded important general data related to their socio-

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demographic information and self-perception of their level of English. At the same time, a pre-test of knowledge of the language was taken from the students which was based on the Cambridge PET exam. With this exam, data were obtained for the development of the intervention plan that was implemented throughout the semester. **Results**: after the intervention phase, the students took a post-test and the corresponding means could be compared. They obtained 9.20 for the control group and 11.99 for the experimental group as final scores. **Conclusion:** it is concluded that the Moodle Platform is a valuable didactic support to improve English language skills.

Keywords: Communication, skills, language, Moodle platform.

#### Resumen.

Introducción: la educación superior ha experimentado grandes cambios en la modalidad de enseñanza debido a situación mundial. En este contexto el e-learning a través de las plataformas educativas ha tomado gran valor en el proceso de enseñanzaaprendizaje. Objetivo: aplicar una intervención educativa a través de la plataforma Moodle para consolidar las destrezas del idioma Ingles en los estudiantes de la carrera de mantenimiento industrial de la Escuela Superior Politécnica de Chimborazo durante el período especial Abril-Septiembre 2020. Metodología: esta investigación fue realizada en el contexto de teletrabajo obligatorio por la pandemia Covid-19. Esta investigación de carácter mixta tuvo un enfoque descriptivo con el cual un cuasiexperimento fue desarrollado. Para la consecución de esta investigación, 70 estudiantes provenientes del tercer semestre tomaron parte activa de la misma quienes estaban divididos en dos grupos de estudio: el grupo de control y el grupo experimental, con 35 estudiantes respectivamente. Antes de la fase de intervención, se recabó información a través de una encuesta la cual arrojó datos generales importantes relacionados con información socio-demográfica y de autopercepción de su nivel de Ingles. Al mismo tiempo se tomó un pre-test de conocimiento del idioma a los estudiantes el cual se basó en el examen de Cambridge PET, con lo cual se obtuvieron datos para la elaboración del plan de intervención que fue llevado a cabo durante todo el semestre. **Resultados:** después de la fase de intervención, los estudiantes tomaron un post-test con lo cual se pudo comparar las medias correspondientes dando como calificación final de 9,20 para el grupo control y 11.99 para el grupo experimental. Conclusión: se concluye que la Plataforma Moodle es un valioso soporte didáctico para mejorar las habilidades del idioma Inglés.

Palabras claves: Comunicación, habilidades, idioma, plataforma Moodle.

#### Introduction

Improving the English language skills of higher education students is of paramount importance to the whole of society. With English being the global language, students



must be proficient in English to face challenges in today's world. Therefore, education requires the contribution of its actors with innovative ideas to improve the development of communication skills.

The career of industrial maintenance aims to train suitable, competitive, entrepreneurial Industrial Maintenance Engineers, aware of their local and national identity, social justice, democracy and preservation of the environment, through the generation, transmission, adaptation and application of scientific and technological knowledge in the area of maintenance to contribute to the integral and sustainable development of the country, in consideration of the policies of the Ecuadorian Plan for Good Living (Escuela Superior Politécnica de Chimborazo, 2017). For that reason, teachers must implement teaching strategies to help students to apply scientific research methods, computer techniques and statistics for making correct decisions and solving problems that arise in the professional performance of industrial maintenance. In this scenery, English constitutes one of the most important subject matter for this career hence it is considered the language of technology and science (Cristal, 2003).

The challenge of the quality of higher education requires a revamping of its system with new ways of teaching and learning. The incorporation of information and communication technologies to the habitual work of all areas of knowledge at the university level is essential for the training of students. Such implementation determines the need to rethink certain core aspects of teaching, which, among others, is the organization of the educational process, the design of both activities and teaching materials, specific evaluation methods, as well as the relationships between teachers and students that should be projected in a different learning environment (López, 2011). Taking into consideration that the internet has brought about a social revolution in many areas of life such as in education (Dougiamas & Taylor, 2002).

In fact, Web 2.0, in all this order of issues, has implied two great consequences (Moreno, 2011). On the one hand, it has given rise to a list of suggestive collaborative tools of proven utility in the educational field - such as, among others, blogs, wikis, social networks and forums - and, on the other, it has represented a remarkable evolution of distance training giving rise to what is known as e-learning 2.0 (Llorente, 2012). In addition, it should be noted that there are platforms that make full use of the latter. There are so-called metaverses that constitute fictitious constructions in which users interact by virtue of avatars or alter ego - virtual representation of the former. To a certain extent, it could be said that they try to reproduce real participation in an online environment, but without the space-time limitations inherent in the former (López, 2011). Since their appearance, they have been used, among other objectives, for educational purposes. In this scenario, the teacher becomes a mere facilitator, ceasing to be a transmitter of content.

Besides, in accordance with the Ministerial agreement MDT-2020-076 with the objective to guarantee the health of workers and public servants during the health emergency; the government resolves to adopt emergent telework in the area of



education and other fields because of the pandemic COVID-19 (Ministerio de Trabajo del Ecuador, 2020) to prevent the contagion. This political decision was mandatory at the Escuela Superior Politécnica de Chimborazo because it is part of Ecuadorian higher education.

In this sense, at Escuela Superior Politécnica de Chimborazo, the telework was implemented and e-learning became the most important way of teaching due to the pandemic. For that reason, the contact with students and the teaching-learning process was developed through Moodle platform for asynchronic classes and Microsoft TEAMS for the synchronic ones.

As it was mentioned before, the career of Industrial maintenance aims to make outstanding support for the society, that is why it looks for forming competitive professionals in the industrial field. To achieve professionals with this level of preparation and general culture, it is necessary to work hard in their training from lower levels. Higher education institutions have the social responsibility of training the country's industrial maintenance professionals and that in turn they can face the challenges of current industry and get ahead in a competitive sector that demands high preparation and professionalism (Barberán, Leyva, & Mendoza, 2018).

One of the main challenges today to industrial maintenance professionals is the low level of communication in the global language (Cristal, 2003). Possessing skills in the use of English becomes a necessary instrument for professionals in the sector in order to achieve fluent communication with technician worldwide who do not speak Spanish. In the era of globalization, industrial maintenance engineers must be competitive to face today's challenge.

That is why, taking into account the importance of mastering the English language in the undergraduate training of students of the Bachelor of the industrial maintenance career, the low level of skills and abilities that these students manifest and the scarcity of research that addresses these issues in Ecuador; it was decided to carry out this research with the aim of applying an educational intervention through the use of Moodle platform to consolidate the English language skills in students of the career of industrial maintenance at Escuela Superior Politécnica de Chimborazo.

# e-Learning

E-learning is the abbreviated term in English for electronic learning, which refers to teaching and learning online, through the Internet and technology (Dougiamas & Taylor, 2002). Also known as virtual teaching, online training, teletraining or distance training, terms that are not synonymous (Llorente, 2012).

E-Learning uses new multimedia and Internet technologies within the teachinglearning process (Moreira & Segura, 2009). All definitions of e-Learning mainly use the Internet. Technological changes related to Distance Education and occupy a large part of the research (Moreno, 2011). M-Learning, involves learning through mobile



devices; the telecommunications sector is contributing to access to education (Mego, 2019).

The origin of the term e-Learning comes from the field of occupational training for educational applications in new technologies for information and communication. Private companies dedicated to offering continuous training, especially managers, who coined this concept. For this reason, e-learning represents more a marketing label than an academic concept, but undoubtedly, at present, it has already been assumed as the benchmark in the field of education through computer networks (Moreira & Segura, 2009). In its beginnings, the concept was linked to another related to the applications of computer networks in the organization of companies: knowledge management. In this sense, knowledge management and e-learning would represent two sides of the same phenomenon since e-learning would become the training process of a company's human resources to achieve effective knowledge management (Rosenberg, 2001).

# Moodle

The Moodle platform is a teaching system designed to create and manage online learning spaces adapted to the needs of teachers, students and administrators. In more technical terms, it is a dynamic web system created to manage virtual teaching environments, based on PHP technology and MySQL databases (Gómez, Reyes, & Tirado, 2015). The first version was created in 2002 by the Australian pedagogue and computer scientist Martin Dougiamas, and its original name comes from the acronym of Module Object-Oriented Dynamic Learning Environment (Modular Object-Oriented Dynamic Learning Environment).

As it was said, e-learning represents the way of education focused on using electronic devices with internet connection to do it (Llorente, 2012). In this sense, it is important to note that nowadays, students own their corresponding smartphones, tablets, and laptops to face their virtual learning. Even if they do not have internet connection, students use their cellphone credit to be connected. That is what is happening today due to the pandemic. Therefore, teachers must support with valuable material and activities in educational platforms like Moodle not only for accomplish duties but also because there are some advantages that have been noted during this investigation such as

- a) the space-time barrier disappears because the platform is available all the time and both teachers and students can work on it at any time.
- b) flexibility in the study according to the circumstances of the student. It is very important to remark that some students have been living difficult conditions since they live in some places where internet connection is not so good. Besides, there are some economic difficulties like the use of just one computer in the whole family. However, when using a platform, they can manage their time and studies with flexibility.
- c) more personalized interaction. Having flexibility, also involves more personalized interaction with students at any time they need.



- d) cost savings. There are some expenses that students and parents are not affording nowadays like the rent, transport, and food.
- e) instant content update. The teachers' duty has been challenging because information must be addressed in advance. However, with this platform, updating materials, activities, information in general was so fast.
- f) constant communication. Both teachers and students have been in direct communication all the time. The students to make questions and the teacher to answer them.

The first strong point of Moodle is that it is free software that is distributed under the GPL (General Public License). This means that any person or institution can make use of it and adapt it to their needs without paying a penny for it.

# Moodle as free and open access platform

Everyone can download, install, use, modify and customize Moodle at zero cost. The free and open nature of Moodle makes it a very attractive tool, which also has many more benefits as Pizarro (2019) stated:

- Stable and reliable tool which is trusted by many kinds of organizations to develop their online educational projects.
- Easy to use because it is very simple.
- Being an open-source software, Moodle can be customized and adapted to individual needs.
- It is suitable for both large and small groups.

# Methodology

The intervention proposed in this research was focused on the use of Moodle platform to improve the English language skills such as reading, listening, writing as well as grammar, and vocabulary. A quasi- experiment was carried out to achieve this goal with a mixed approach and descriptive scope with a group of students that were distributed as the table above shows:

## Table 1. Population

ESCUELA SUPERIOR POLITÉCNICA DE CHIMBORAZO									
STUDENTS FROM THE INDUSTRIAL MAINTENANCE CAREER									
SEMESTER ROOM MEN WOMEN TOTAL GROUPS									
3	А	28	7	35	Experimental Group				
3	В	27	8	35	Control group				

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TOTAL	55	15	70	-
Created by Damasha N	(2021)			

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At the beginning of the Special academic period April-September / 2020, the students took a survey related to their own perception about their English level and a pre-test based on the language skills mentioned before. Then, based on the results, an intervention plan was designed in order to support the students in the English language skills improvement. After the intervention, in other words, at the end of the special academic period, the students took a post-test with the aim of comparing the means to establish if their language learning was improved or not. The analysis of data which came from both the pre and post-tests was developed through the SPSS statistical software.

It must be explained that both, the control group and the experimental group worked in the Moodle platform; however, the experimental group work was focused on activities that helped to activate communicative competences to produce the language (Concil of Europe, 2001). The material used was related to reception texts (reading and listening) about the main topics addressed in the career to arise knowledge in social and professional domains (Concil of Europe, 2001) and the ability to put the language into practice.

# **Analysis and interpretation**

As it was mentioned before, the total population took a survey to convey their own perceptions in their level of English. This survey was designed using a questionnaire in Moodle. With all the information collected, an Excel database was created that allowed the homogenization of the information.

Information	Total sample
	70 students
Average age	19,56 years - Standard Deviation 2,44 years
Gender	
Male	55 (78.57 %)
Female	15 (21.42 %)
Provenance	
Rural	29 (41,42 %)
Urbana	41 (58,57 %)
English language background	
Yes	70 (100 %)
No	0 (0 %)
English language level	
(self-perception)	

# Table 2.

Average age	
Gender	



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As table 2 displays, the average age is 19 - 56 years with a Standard Deviation of 2.44. Besides there is a predominance of the male population (78.57%); on the contrary, the female population represents 21.42% of the total population who mostly come from the urban area (58.57%). As students attend to third semester, they answered that they have an English language background. Finally, their self-perception of the English language level was that the majority of them (61.42%) have a low level; while 27.14% of them recognize themselves as average range. Just, 11.42% of the total population have a high level of English.

After taking the survey, the students took the pre-test. It was adapted from the PTE (Preliminary English Exam) from Cambridge Assessment which is available on line.

# **English language skills**

#### Table 3.

English language skills. Pre and Post-test – Control group

Pre-test		Post-test
Reading	8.40 (42%)	8.94 (44.7 %)
Listening	7.71 (38.55%)	7.89 (39.45%)
Writing	7.49 (39.7%)	8.43 (42.15%)
Grammar	9.71 (48.55%)	10.26 (51.30%)
Vocabulary	9.83 (49.15%)	10.49 (52.45%)
Expected Average per criterion	20 (100%)	20 (100%)

# 

Created by: Remache, N. (2021)

It must be explained that in the educational intervention period, the students who belonged to the control group took on line classes through the Moodle platform with the same topics as the experimental group; however, this group of students only worked with activities like fill in the blank spaces, answer grammar questions and patterns, and some quizzes.

Taking into consideration that the expected average per assessment criterion is 20, the results in the reading are slightly similar. The result in the post-test differs from that in the pre-test in 2.70%. It means that the reading skill was not enhanced. Besides in the listening skill, the results are pretty similar, 7,71 in the pre-test against 7.89 in the post-



test. Furthermore, in the writing skill the control group obtained 7.49 in the pre-test and 8.43 in the post-test out of 20. In grammar, the students got 9.71 in the pre-test and 10.26 in the post-test. Finally, in vocabulary, it happened the same, students obtained 9.83 in the pre-test and 10.49 in the post-test.

# Pre – Post-test experimental group Table 4.

English language skills

Pre-test	Pe	ost-test
Reading	8.86 (44.30%)	11.37 (56.85 %)
Listening	7.31 (36.55%)	11.09 (55.45%)
Writing	7.51 (37.55%)	13.14 (65.70%)
Grammar	9.86 (48.7%)	12.11 (60.55%)
Vocabulary	9.63 (49.30%)	12.23 (61.15%)
Expected Average per criterion	20 (100%)	20 (100%)

Created by: Remache, N. (2021)

Regarding to the experimental group where the intervention was carried out with a communicative competence focus. The students have activities posted in the Moodle platform which were centered in the use of the language for communication. In this sense, the students read some texts and make a series of tasks to use that information with communication purposes. Furthermore, they listened some tapes and produce the language through retelling the stories or information in written texts. Moreover, grammar and vocabulary were taught in context.

Therefore, the results for the experimental group are motivating. In the reading skill, the students experienced an improvement from 8.86 to 11.37. In the listening skill, the group got 7.31 to 11.09. In the same way, in the writing skill, the experimental group obtained a good improvement from 6.51 to 13.14. In grammar, the result in the pre-test is 9.86 to 12.11. Last but not least, in vocabulary, they had 9.63 in the pre-test against 12.23 in the post-test.

All of these results were contrasted in the T-test done through the SPSS statistical software to compare means.



# Pre-test

Table 4.

Means comparison. Pre-test

# **Group Statistics**

	Group	N	Mean	Std. Deviation	Std. Mean	Error
Pre-test	Control group	35	8.63	3.468	.586	
	Experimental group	35	8.59	3.443	.582	

# **Independent Samples Test**

Levene's		
Test	for	
Equality	of	
Variances	5	t-test for Equality of Means

			-			Sig. (2-	Mean Differe	Std. Error Differe	Interval	95% Confidence Interval of the Difference	
		F	Sig.	t	df	tailed)	nce	nce	Lower	Upper	
Pre- test	Equal varianc es assume d	.000	.985	.048	68	.962	.040	.826	-1.608	1.688	
	Equal varianc es not assume d			.048	67.996	.962	.040	.826	-1.608	1.688	

# Created by: Remache, N. (2021)

With an interval of confidence of 95%, it is seen that in the Levene's test and the p. significance is .985 which is > than .005 therefore, equal variances are assumed. In addition, in the 2 -tailed significance the result is .962 which is > .005. It means that there is no a significant difference between the means of the control and the experimental group. It indicates that, the two groups were in the same level of English knowledge.



## Post-test

# Table 5.

Means comparison. Post-test

# **Group Statistics**

	Group	N	Mean	Std. Deviation	Std. Mean	Error
Post-test	Control group	35	9.20	3.506	.593	
	Experimenta l group	35	11.99	2.710	.458	

#### **Independent Samples Test**

		Levene's Test for Equality of Variances t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differen ce	Std. Error Differen ce	95% Confide Interval Differen Lower	of the
Post- test	Equal variances assumed	3.620	.061	-3.723	68	.000	-2.789	.749	-4.283	-1.294
	Equal variances not assumed			-3.723	63.939	.000	-2.789	.749	-4.285	-1.292

# Created by: Remache, N. (2021)

In the comparison of means, this test shows that the 2-tailed significance is .000 which is < .005. This is understood as there is a significant difference between the means of the pre and the post test from the two groups of study.

# Conclusions

After finishing the first semester that was totally online due to the Covid-19 pandemic, an important conclusion must be addressed.



- Students have great encouragement and commitment during their English classes because they are aware about their low level of English.
- The Moodle platform contains reliable tools for the teacher to engage students into their learning process.
- The use of the Moodle platform is a valuable support for the English language improvement. As it was proved in the T-test, the results showed that there was a significant improvement in the students of the experimental group. Those students performed in a better way and proved their enhancement in their English language.

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