

MOODLE IN DISTANCE EDUCATION

MOODLE EN LA EDUCACIÓN A DISTANCIA

MOODLE NA EDUCAÇÃO À DISTÂNCIA



Walter Vladimir Flores-Piñas^{1*}; Haydee Flores-Piñas²; Paulo Cesar Chiri-Saravia²; Kevin Mario Laura-De La Cruz³

wvfloresp@ucvvirtual.edu.pe; hfloresp@une.edu.pe; pchiri@une.edu.pe; klaurac@unjbge.edu.pe

¹Universidad César Vallejo, Lima, Perú

²Universidad Nacional de Educación Enrique Guzmán y Valle, Lima, Perú

³Universidad Católica de Trujillo Benedicto XVI, Tacna, Perú

*Correspondence: Walter Vladimir Flores-Piñas Email: wvfloresp@ucvvirtual.edu.pe

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ABSTRACT

The Moodle platform is a software that provides a unique framework within which students can access a wide range of online resources, allowing teachers and students to interact using different communication tools at any time. This platform contains a series of tools that were used during distance education as an educational proposal and in the middle of the 2020 pandemic as a necessity to keep the educational system running. For this reason, this article aims to review the positions of researchers on the benefits of the Moodle platform in distance education. It is concluded that the different researchers have a positive position on the benefits of the Moodle platform in distance education. Other researchers affirmed that during 2020, the use of the platform is a response to the need for continuity of the educational service and not as a proposal to stimulate learning activities.

Keywords: moodle, virtual education, systematic review.

RESUMEN

La plataforma Moodle es un software que proporciona un marco único dentro del cual los estudiantes pueden acceder a una amplia gama de recursos en línea, permitiendo a los profesores y estudiantes interactuar utilizando diferentes herramientas de comunicación en cualquier momento. Esta plataforma contiene una serie de herramientas que fueron utilizadas durante la educación a distancia como propuesta educativa y en plena pandemia del 2020 como una necesidad para mantener el sistema educativo en funcionamiento. Por ello, este artículo pretende revisar las posturas de los investigadores sobre los beneficios de la plataforma Moodle en la educación a distancia. Se concluye que los diferentes investigadores tienen una posición positiva sobre los beneficios de la plataforma Moodle en la educación a distancia. Otros investigadores afirman que, durante el año 2020, el uso de la plataforma responde a la necesidad de continuidad del servicio educativo y no como una propuesta para estimular las actividades de aprendizaje.

Palabras clave: moodle, educación virtual, revisión sistemática.

RESUMO

A plataforma Moodle é um software que fornece uma estrutura única dentro da qual os alunos podem acessar uma ampla gama de recursos on-line, permitindo que professores e alunos interajam usando diferentes ferramentas de comunicação a qualquer momento. Esta plataforma contém uma série de ferramentas que foram utilizadas durante a educação à distância como uma proposta educacional e no meio da pandemia de 2020 como uma necessidade para manter o sistema educacional funcionando. Por esta razão, este artigo visa rever as posições dos pesquisadores sobre os benefícios da plataforma Moodle na educação à distância. Conclui-se que os diferentes pesquisadores têm uma posição positiva sobre os benefícios da plataforma Moodle no ensino à distância. Outros pesquisadores afirmaram que durante 2020, o uso da plataforma é uma resposta à necessidade de continuidade do serviço educacional e não como uma proposta para estimular atividades de aprendizagem.

Palavras chaves: moodle, educação virtual, análise sistemática.

INTRODUCTION

When addressing the issue of distance education in the current context of the COVID-19 pandemic, the resources and new solutions implemented by teachers at different levels of education must be considered to give continuity to the teaching processes and learning. One of these resources are information and communication technologies, where educational platforms are one of the various educational tools.

Rocha and Sampaio (2020) mention the new world context, when they affirm that the unexpected COVID-19 pandemic in 2020 with the imposition of quarantines and social isolation has led to the suspension of face-to-face classes and to reduce prejudices in education, to the use of technologies: in a short time, the need is changing educational practices and leading us to reflect on the future of this field. At the end of the 20th century, information and communication technologies were already used for teaching in some areas of basic education and as tools for practices in some subjects at the higher level linked to ICTs. For Brouwer and McDonnell (2009) cited by Schettini et al. (2020) ICT can support learning processes and make easier the transition from a teacher-centered approach to flexible process-centered learning in which students actively build their knowledge using different sources. With the use of ICT appears the concept of learning through the use of electronic media such as computers. Sanaky (2013) cited by Sumarwati et al. (2020), mentions that e-learning consists of online learning applications using electronic media. The benefit of learning through e-learning is that it allows you to create learning opportunities with better interactivity, there are no time and put restrictions and students become more responsible for their educational achievements.

One of the tools used in distance education for e-learning is Moodle, for Vaskovskaya, (2018) cited by Vaganova et al. (2020), the Moodle platform is a learning management system. Its use has positive aspects. Graham (2007), cited by Schettini et al. (2020), states that this technological model increases student productivity, expanding the amount of information and wealth of educational material. In the same way, Schettini et al. (2020) state that the Moodle platform is a software that gives a unique structure within which students can access a wide range of online resources, permitting teachers and students to interact employing different communication tools at any time. Evaluation can also be done through the use of different tools in Moodle, such as self-assessment tests, which provide feedback to students on the knowledge and skills acquired in face-to-face lectures.

Moodle presents various tools for managing audiovisual material for evaluation. Regarding the latter, Pliushch (2018) cited by Vaganova et al. (2020), stated that the test questions are managed through the “question bank”. Raven (2017), cited by Vaganova et al. (2020), mentions that these can be tests for input control, current control or final control. Moodle allow a wide range of characteristics for instant automatic verification and assessment of assignments. It is also worth mentioning that Moodle has other tools, apart from the evaluative one. Paschalis (2017) stated that Moodle integrates a variety of Internet-based tools that permit learners to do activities together online. This can include online conversations such as forums and email lists, document elaboration on wikis, file sharing and storage, etc. These tools give a variety of services to design, manage, and conduct collaborative online learning tasks in addition to authoring environments to create sequences of learning activities. Most LMSs provide many collaboration and communication tools to support information sharing and communication between learners in a study programme and permit collaborative learning. Due to the above, this review article has the following objective: To review the positions of researchers on the Moodle platform and its benefits in distance education.

METHOD AND MATERIALS

A systematic search was carried out in databases such as Scopus and ProQuest. The search terms used were: Moodle, education, distance, distance, education. Research articles on the Moodle platform in distance education were selected.

The inclusion criteria were articles published in indexed journals, which guarantees their quality and validity. The temporality of publications not older than five years was taken into account. The electronic search included publications in English and Spanish.

RESULTS

The Moodle Platform

Espigares and Bautista (2018) stated that Moodle is a software to produce courses based on the use of the Internet, in addition to web pages. On the other hand, it is a project developed for free distribution and to support social constructivism within the educational context.

González (2020) stated that the Moodle platform is the abbreviation for Modular Object-Oriented Dynamic Learning Environment and that it has been positioned for a few years as an ideal environment for both self-regulated learning and for learning. teacher-mediated learning and collaborative learning. It allows access from a matrix to the material prepared by the teacher and to resources contained in the network, in addition, it enables the creation of interactive activities, work instruments and self-assessment activities.

Bedregal, Cornejo, Tupacyupanqui, and Flores (2019) mentioned that Moodle was created by Dougiamas, who based his design on the constructivist approach, where it is argued that knowledge is built in the mind of the student instead of being transmitted from books. or teachings. Moodle is a virtual learning platform that provides teachers, administrators and students with a single, robust and secure integrated system for creating personalized learning context.

Delgado, García, and Hurtado (2018) stated that Moodle is understood as a free distribution course administration system that assist teachers create online learning groups and that as a tool it contributes to education, with the ultimate goal of promote the creation and management of teaching and learning spaces on the internet.

Moodle platform tools used in distance education

Espigares and Bautista (2018) indicated that the Moodle tool includes different digital learning objects such as chats, forums, online workshops, ICT-based tasks and communication tools that are defined as digital learning objects. As these authors point out, some of the most notable characteristics of this type of objects are their adaptability, versatility and the possibilities they offer as communication tools in ICT-mediated teaching-learning contexts. Also, Vaganova et al. (2020) stated that Moodle tools allow teachers to use Moodle tools to create highly effective assessments on any subject area. This allows them to choose particular settings for the student group and for each student. Employing the Moodle assessment tools, educators possess the opportunity to obtain objective results from the training of students.

Vinothini et al. (2019) cited by Vaganova et al. (2020) commented that this platform enables you to create and administrate information resources and the educational scenario, allows you to intensify work, reduce the loss of educational time. Almanza, Moreno, and Haro, (2019) mentioned that among the tools that Moodle has are the types of sending messages: The so-called internal mail and messaging. Messaging is related with each person who is registered. The internal mail is included in each subject. The internal mail works as an email of the subject and each person will be able to write to any member they want. Moodle offers the opportunity to interact through chat and video conferences. The forums are the most employed to clarify doubts and to do exercises.

Moreno, Hidrobo, and Barrios (2019) mentioned that Moodle gives a more flexible set of tools to support online learning and study programme. When configuring Moodle, you can enable or disable principal characteristics and easily incorporate everything you need for a educational programme; employing a very complete range of attributes, complementing external collaborative

tools, such as wikis, chats and blogs. On the other hand, because it is an open source, it can be customized, in any desired mode, to suit personal needs. Its modular configuration and interoperable model allows developers to build components and incorporate external applications to reach particular functionality.

Researchers' claims about Moodle in distance education

The use of the Moodle platform presents a variety of positive aspects, as mentioned by Schettini et al. (2020) when they stated that 100% of the active students who took the intermediate evaluation test affirm that the platform made them more self-confident or more motivated and aware. The feedback gave students the skill to complete their preparation before facing both the intermediate test and the final exam. Paschalis (2017) stated that the assessment of the student tasks and the comparison with the corresponding tasks of the previous academic year presented a better level of collaboration and performance of the students, but also showed that the learning framework provided teachers a better effective mode to guide your students in collaborative project-based learning.

Masterman et al. (2009), cited by Paschalis (2017), investigated the initial learning perceptions of experienced teachers as a conceptual framework for practice through their Moodle instantiation. In this study, the perceptions of the participants were examined and they reached a consensus that the Moodle platform was used by teachers to structure learning, catering to a variety of skills and motivating students. Sumarwati et al. (2020) stated that their findings have shown that mathematics learning media using Moodle is suitable for motivating students to use their minds to understand and manipulate information to locate viable answers to various difficulties, mainly connected to the geometry of the subject of the flat side. Furthermore, learning mathematics employing Moodle can motivate students to generate new ideas, to concentrate and to be active throughout the teaching and learning activities. Kim et al. (2019) mentioned that, after checking the result of the application of the class model based on Moodle, a positive effect was located in the students with respect to group tasks. In addition, the application of the Moodle-based online class model for university students had an appropriate effect on the improvement of discussion activities, active alternative, questions and imagination.

Kim et al. (2019) stated that real-time interaction is one of the benefits of an online learning system. In online learning, real-time interactions can be enabled to allow collaboration between teachers and students, rather than simply uploading and managing bulletin boards and learning resources. The functionality gives students with the skill to freely express thoughts on class content and other learning-connected topics. These Moodle-based online learning systems are based on constructivist learning theories, allowing lessons to be student-oriented. Espigares and Bautista (2018) indicated that the use of the Moodle platform has the following advantages: It supports constructivist social pedagogy, making it adequate for face-to-face and distance education, it has an interface compatible with any browser, it is easy to install on most platforms, it is easy to manage because students can create their own accounts and an online profile including their photos and description, interests, likes and motivations, choose the course format by week, by topic or by topic based on a social format that enhances communication and the exchange of information in teaching-learning framework.

Rivadulla (2015), cited by Espigares and Bautista (2018), mentioned a perception of the students, when they affirm that there is a lack of interactivity, since the students use it only to download notes. But he also adds that students perceive a positive aspect: accessing the platform and its resources saves time and money. Marín, Sampedro, and Vega (2017) mentioned that the students who participated in their study are open to their employment, so their perception of their employment is positive. It is positive the perception of a development of their learning process through Moodle. However, if we look at gender, we see that men are the ones who most prefer to participate in this type of training.

Bedregal, Cornejo, Tupacyupanqui, and Flores (2019) concluded that students maintain a moderately positive attitude towards the use of the virtual classroom implemented on the Moodle platform, positively value its ease of use and its usefulness as a facilitator of the learning process. Therefore, it can be concluded that students are willing to use the virtual classroom implemented on the Moodle platform, as long as they find that the activities to be carried out favor their learning and they do not encounter difficulties in its use. It is necessary then, to create a balance between the effort invested and the benefits that it would bring them.

Regarding the benefits of the Moodle platform, Delgado, García, and Hurtado (2018), indicated that students perceive that its use saves and makes time more flexible and reduces spending on academic material, giving access to a much broader universe of content. than the one worked by the teacher and, in addition, other agents such as classmates, opinions of other people outside the classroom, etc. intervene. that complement the work of the teacher and help the student to better understand each subject, also energizes the entire learning process and improves the motivation of the students.

Table 1
Researchers' claims about Moodle in distance education

Authors	Important results
Schettini et al. (2020)	100% of active students who took the intermediate assessment test say that the platform made them more self-confident or more motivated and aware
Paschalis (2017)	It showed better collaboration and student performance, but also showed that the learning scenario provided teachers a more effective mode to guide their students in collaborative project-based learning.
Masterman et al. (2009), cited by Paschalis (2017),	The Moodle platform was used by teachers to structure learning, catering to a variety of skills and motivating learners.
Sumarwati et al. (2020)	Moodle is suitable for motivating students to use their minds to understand and manipulate information to locate viable solutions to various difficulties.
Kim et al. (2019)	Found a positive effect on students regarding group assignments
Espigares and Bautista (2018)	It is easy to manage because students can create their own accounts and an online profile including their photos and their description, interests, likes and motivations.
Rivadulla (2015), cited by Espigares and Bautista (2018),	There is a lack of interactivity, as students use it only to download notes
Marín, Sampedro, and Vega (2017)	The students who participated in his study are open to their employment, so their perception of them is positive. It is positive the perception of a development of their learning process through Moodle.
Bedregal, Cornejo, Tupacyupanqui, and Flores (2019)	The students maintain a moderately positive attitude towards the use of the virtual classroom implemented in the Moodle platform.
Delgado, García, and Hurtado (2018)	Students perceive that its use saves and makes time more flexible and reduces spending on academic material

On the challenges of digitization in education

On the digitization of education, Suartama and Punaji (2020) stated that the digitization of population, changes in the structure of education and technological resources have increased the improvement of an open learning context. The application of e-learning and mobile learning poses various new difficulties, such as distancing students from the real world, difficulty for students to meet learning objectives, providing students more time for entertainment, as well as the problem of the increase in the cognitive load of the students. The authors further stated that e-learning and mobile learning, if well managed, can offer more opportunities to access new educational methods,

where students can acquire new knowledge according to their learning styles, also the teacher. can provide information at any time and place based on the characteristics, needs and desire for improvement of students in their academic and productive performance.

Galán (2017) mentioned that the Moodle platform makes it easier for theoretical courses to be offered online. It also implies that changes must be made at the methodological level by the teacher, as well as an adaptation of the resources to be used. Through this, a change arises not only at the didactic level, but also in terms of the technological infrastructure that should favor the creation of activities and the participation of everybody in these virtual contexts. In this sense, an open study programme arises, in which educators should generate individual and collective learning opportunities to carry out activities and abilities, as well as the development of skills and competencies of students. Espigares and Bautista (2018) stated that, due to the new needs and challenges that arise in the current digital information society, a specific use of a telematics platform is presented that favors a high level of control of the teaching and learning process. of the students and some variables such as, for example, the scores in the tests to assess the level of performance of the students, which are registered and allow their subsequent study. This platform to which the authors refer is the Moodle, as a response to this need of the current digital society.

Espigares and Bautista (2018) mentioned that open-source learning tools such as Moodle would quickly and easily offer teachers detailed information on the teaching-learning processes in the digital society. Almanza, Moreno, and Haro, (2019) mentioned that the use of educational platforms such as Moodle must be accompanied by a commitment by educators to new teaching techniques. In other words, an increase in teaching staff is required to be able to take on the methodological challenges derived from current educational demands and better attend to the diversity of the student body, thus carrying out a more personalized follow-up. Rivera (2019), cited by Almanza, Moreno, and Haro, (2019) mentioned that a barrier to be overcome by teachers when using the Moodle platform, this inconvenience being the additional time that teachers have to invest to learn the use of ICT and integrate it into their courses.

From the above, it can be seen that the researchers have positive opinions, but that the use of the Moodle platform alone is not enough for the best achievement of student learning in the subjects implemented within this platform. If Moodle is well managed by teachers, it will allow us to achieve student learning and take advantage of its benefits. Torres, Acal, Honrani, and Mignorance, (2021) mentioned instead that there is a general disappointment of students, being essential to carry out the transition of educational activity and teacher training. The implementation of active methodologies increases due to the virtual situation, students express a general dissatisfaction with respect to the adequate methodology, development and participation of teachers. Marbán, and Radwan, (2021) mentioned that digital learning is considered an adequate answer to school closure at the time of the COVID-19 outbreak. Urteaga, Siri, and Garófalo, (2020) stated that the use of the Moodle platform does not prevent the phenomenon of school dropout. Despite this, Cabanillas, Veríssimo, and Luengo, (2020) mention that platforms, such as Moodle, have become an indispensable resource to support face-to-face teaching and allow online training to be developed efficiently.

DISCUSSION

Being the objective of the study to review the positions of researchers on the Moodle platform and its benefits in distance education, it was found in the analysis of the theory that most authors consider Moodle as an essential tool for teaching, more in In these times of pandemic, virtuality has not intensified, as is the case of Espigares and Bautista (2018), who mentioned that this tool includes different objects or digital options such as chats, online workshops, among others, that facilitate learning and teaching. . As these authors point out, some of the most notable characteristics of this

type of objects are their adaptability, versatility and the possibilities they offer as communication tools in ICT-mediated teaching-learning contexts. It is worth mentioning that according to Bedregal et al. (2019) Moodle was created by Dougiamas, who based its design on the constructivist approach, where it is argued that knowledge is built in the student's mind instead of being transmitted from books or teachings. Likewise, this constructivist approach is the one that has its own construction of learning, which is developed through daily interaction between the environment and the internal dispositions of individuals. Here the teacher fulfills a guiding function and it is the student who culminates with their learning, this being logic, the use of the Moodle platform is a tool that allows this development since it provides the opportunity for the teacher's method and strategies to be presented in a more dynamic and innovative way.

But being a tool that constantly evolves, the teacher has to be more prepared in its handling, which in our country still lacks greater emphasis on the training that teachers must have regarding the use of ICTs, as is the case with the Moodle platform. Despite the good results in learning, it is necessary to continue improving. That is why Almanza, Moreno, and Haro, (2019) mentioned that the use of educational platforms such as Moodle must be accompanied by the commitment of teachers to new teaching methods. In other words, an increase in the teaching staff is necessary to meet the methodological challenges posed by current educational demands. On the other hand, within the investigations in relation to the management of the Moodle platform Schettini et al. (2020) referred in their study that most of the students mentioned that the use of this tool gives them security and motivation when taking their tests, being clear how this tool for students is a positive effect that allows more dynamism to when solving tests or exams (Laura-De La Cruz and Tolentino, 2022).

Another study is that of Paschalis (2017) who observed that this tool caused greater interaction and collaboration between teachers and students, in addition to providing teachers with better options for teachers to guide their students in collaborative work and learning. , a similar situation that occurs in the study by Sumarwati et al. (2020) where they found that Moodle motivates students to a better understanding and interpretation of motivation and provides better solutions to their problems, while Kim et al. (2019) found a positive effect on students regarding group tasks, this being an essential tool to strengthen and generate collaborative work that is one of the most effective when it comes to learning. There is also the study by Bedregal, Cornejo, Tupacyupanqui, and Flores (2019) who affirmed that students in the use of this tool maintain a positive attitude, since it gives them a better vision of the teacher's strategies, likewise Delgado, García, and Hurtado (2018) found that students perceive that its use saves and makes time more flexible and reduces spending on academic material.





As we observed, most of the results and analysis show us that the Moodle platform is a dynamic tool that speeds up the learning and teaching processes, where the student is motivated and generates greater joint participation between teachers and students as well as among the students themselves. Rivera (2019), cited by Almanza, Moreno, and Haro, (2019) refer that a barrier to overcome is the additional time that teachers have to invest to learn the use of ICT and integrate them into their courses, and in this way way to increase the positive results of this platform (Laura et al., 2022).

CONCLUSIONS

Researchers agree that information and communication technologies are the basis for the existence of educational platforms such as Moodle and that the Moodle platform energizes learning activities in distance education between students and teachers, in times of prior to the pandemic.

The researchers, during the 2020 period, stated that there was a massive use of educational platforms, including Moodle. However, there is still no conclusive perception in this period, since its use responds to a need for continuity of the educational service and not as a proposal to boost learning activities.

ORCID

-  **Walter Vladimir Flores-Piñas:** Universidad César Vallejo, Lima, Perú.
-  **Haydee Flores-Piñas:** Universidad Nacional de Educación Enrique Guzmán y Valle, Lima, Perú.
-  **Paulo Cesar Chiri-Saravia:** Universidad Nacional de Educación Enrique Guzmán y Valle, Lima, Perú.
-  **Kevin Mario Laura-De La Cruz:** Universidad Católica de Trujillo Benedicto XVI, Tacna, Perú.

AUTHORS' CONTRIBUTION

- Walter Vladimir Flores-Piñas:** Conceptualización, Adquisición de fondos, Investigación, Software.
- Haydee Flores-Piñas:** Metodología, Validación, Visualización.
- Paulo Cesar Chiri-Saravia:** Administración de proyectos, Recursos, Redacción: borrador original.
- Kevin Mario Laura-De La Cruz:** Curación de datos, Análisis formal, Supervisión, Redacción: revisión y edición.

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CONFLICT OF INTERESTS

The author declares that he has no conflict of interest.

GRATITUDE

Not applicable.

REVIEW PROCESS

This study has been peer-reviewed and double-blinded.

RESPONSIBLE EDITOR

-  **David Varona-Aramburu,** davarona@ucm.es

DATA AVAILABILITY STATEMENT

The database of the present research will be available to the scientific community upon request to the corresponding author.

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