

Aspects to be taken into account by teachers for the correct use of Moodle as a support tool for face-to-face teaching

Aspectos a tener en cuenta por el profesorado para un correcto uso de Moodle como herramienta de apoyo a la docencia presencial

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ABSTRACT. Moodle has become the tool that supports face-to-face teaching in many degrees and universities, but this tool can have the opposite effect to support, and can lead to information and material overload in many students or can even encourage student absenteeism because all the subject material is on Moodle. Given this situation, this study has identified, through the Delphi methodology and based on the judgement of experts, aspects and indications to take into account in its use in order to achieve an effective use of Moodle as a support tool for face-to-face teaching (avoiding information overload and discouraging absenteeism) and to enrich the training process of students in degrees and universities that use Moodle.

RESUMEN. La herramienta Moodle se ha convertido en la herramienta de apoyo a la docencia presencial en muchas titulaciones y universidades, pero esta herramienta puede llegar a provocar un efecto contrario al apoyo, pudiendo llegar a provocar la saturación de información y material en muchos estudiantes o pudiendo llegar a incentivar el absentismo de los estudiantes por estar todo el material de las asignaturas en Moodle. Ante esta situación, este estudio ha identificado, a través de la metodología Delphi y basándose en el juicio de expertos, aspectos e indicaciones a tener en cuenta en su uso para conseguir un uso efectivo de Moodle como herramienta de apoyo a la enseñanza presencial (evitando la sobrecarga de información y desincentivando el absentismo) y para conseguir enriquecer el proceso formativo de los estudiantes de las titulaciones y universidades que utilizan Moodle.

KEYWORDS: Moodle, Virtual Campus, Virtual platform, Overinformation, Absenteeism, Teaching.

PALABRAS CLAVE: Moodle, Campus Virtual, Plataforma virtual, Sobreinformación, Absentismo, Docencia.

1. Introduction

The Moodle tool has become the support tool for face-to-face teaching in many degrees and universities, but this tool can have an effect contrary to support, and can lead to information and material saturation in many students or can even encourage student absenteeism because all the subject material is on Moodle.

Given this situation, aggravated by the digitalization of subject materials produced in the COVID period, this study aims to know the aspects to be taken into account by teachers for a correct use of Moodle as a support tool for face-to-face teaching, so that this tool becomes a tool to accompany students in face-to-face teaching and does not cause saturation in students due to excess information or encourage absenteeism because everything is on Moodle, thus managing to identify what should be focused on if we want to achieve optimal use of this tool and enrich the training process of students of degrees and universities that use Moodle.

Through the Delphi method and its successive surveys among teachers who use Moodle as a support tool for face-to-face teaching, this study will point out these aspects to be taken into account, and this will serve to take measures from the teaching staff so as not to lose the training opportunities that this tool offers in teaching as a support tool for face-to-face teaching: allowing the distribution of materials, participation in discussion forums, completion of tasks and online assessments, progress monitoring, and easier communication and collaboration between teachers and students, which translates into an enrichment of the training process.

It is clear that Moodle is a very useful tool as a support tool for face-to-face teaching, but it is also necessary to be clear about the use that should be given to Moodle, in terms of what it should be used for and in terms of the amount of use. And in this way, with this study that allows us to identify the aspects to be taken into account by teachers for a correct use of Moodle, this use of Moodle can be improved based on the function that this tool must fulfill as a support tool for face-to-face teaching.

In the following section, the implementation of virtual platforms in educational institutions as a support tool for face-to-face teaching and its current problems with information overload and the incitement to absenteeism are contextualized through a literature review. It continues with the section that explains the methodology used in this study and the section on the results achieved by applying the methodology, and ends by pointing out which are the aspects to be taken into account by teachers for a correct use of Moodle as a support tool for face-to-face teaching, which serves to make this tool a support tool for students in face-to-face teaching and does not cause saturation in students due to excess information or encourage absenteeism because everything is in Moodle.

2. Literature review

In a society where technologies are present in all sectors (Nguyen et al., 2024; Ayala-Mora et al., 2023; Infante-Moro et al., 2022), educational institutions have also incorporated them into their operations (Bitchikashvili et al., 2023), services (Pla-García et al., 2024; Brink et al., 2020) and teaching methods (Rodríguez Pavón et al., 2024; Estepa Maestre et al., 2024; Araújo et al., 2024; Gallardo-Pérez et al., 2023).

One of the implementations of technologies in educational institutions has been the use of virtual platforms such as Moodle, Sakai and Canvas, among others, as a support tool for face-to-face teaching (Jacovkis et al., 2024; Villar-Aguilés & Muñoz-Rodríguez, 2024; Fauzi et al., 2024). And over time, these have become essential in this type of institution to complement face-to-face teaching, due to two of their main functions: they facilitate the management of educational content and encourage teacher-student communication.

The development of this type of virtual platforms (also known as learning management systems, LMS) began with the expansion of the Internet in the 1990s. Initially, they were used to distribute teaching materials and as a teacher-student communication tool, and currently they even allow the management of evaluations and the inclusion of multimedia and collaborative tools (Bradley, 2021; Clarenc, 2013).



Although it is true that lately, misuse of these is causing information and material saturation in many students, and encouraging student absenteeism because all the subject material is on these platforms (Esanov et al., 2021; Perez-Poch & López, 2017).

For this reason, the relevance of the topic studied here is to know the aspects to be taken into account by teachers for the correct use of these virtual platforms as a support tool for face-to-face teaching, which serves to make these tools become tools to support students in face-to-face teaching and does not cause saturation in students due to excess information or encourage absenteeism because all the subject material is on these platforms.

In this case, this study will focus on the virtual platform Moodle (Modular Object-Oriented Dynamic Learning Environment), one of the most popular virtual platforms. Moodle was launched in 2002 and is an open source and highly customizable platform, which has encouraged its implementation in many educational institutions worldwide (Rizo Rodríguez, 2018; de Lahidalga, 2008).

3. Methodology

The methodology used in this study to point out the aspects to be taken into account by teachers for the correct use of Moodle as a support tool for face-to-face teaching, so that this tool becomes a support tool for students in face-to-face teaching and does not cause saturation in students due to excess information or encourage absenteeism because everything is in Moodle, is Delphi.

Delphi is a methodology based on the opinion of experts and among its uses is that of a tool to define and validate the constructs of a system (Cabero Almenara & Infante Moro, 2014). In this case, it was used to point out those aspects to be taken into account for the problem studied.

To do this, successive surveys were carried out on a group of previously selected experts (in this case, university professors who use Moodle as a support tool for face-to-face teaching), presenting the results achieved in each of the survey rounds, and seeking that these experts reaffirm or rectify their answers in each of the rounds to reach as close as possible to a consensus on which aspects to take into account.

There were three survey rounds:

In the first round, an open questionnaire was chosen that allowed the experts to point out the aspects to take into account, and the aspects that meant the same thing were unified. The latter can be observed in studies such as that of Feret and Marcinek (1999), and helps to ensure that there are no aspects that mean the same thing but are named differently.

In the second round, a closed questionnaire was chosen where the aspects pointed out by the experts in the previous round were presented and each of the experts had to rate (from 0 to 10) each of the aspects, based on their importance in the problem studied.

And in the third round, a closed questionnaire was chosen again, where all the aspects were presented again, which came with the score given by the expert (who had to complete the questionnaire again) in the previous round and with the average score achieved by each of the aspects in the previous round, and where each of the experts had to reaffirm or rectify their answers.

In this way, with the average results achieved for each of the aspects in the third round, it was possible to point out the aspects to be taken into account by the teaching staff for a correct use of Moodle as a support tool for face-to-face teaching, so that this tool becomes a support tool for students in face-to-face teaching and does not cause saturation in students due to excess information or encourage absenteeism because everything is on Moodle.

The number of experts surveyed was 15, which is within the number of experts recommended by other studies for this methodology: between 15-20 experts is recommended by Malla and Zabala (1978), between 10-30 experts is recommended by León and Montero (2004), between 15-35 experts is recommended by Gordon (1994), between 7-30 experts is recommended by Landeta (2002), and between 10-15 experts is recommended by Skulmoski, Hartman and Krahn (2007).

4. Results

The application of this methodology began with Round 1, an open questionnaire that allowed experts to point out the aspects to be taken into account (Table 1):

Identifies the aspects to be taken into account by teachers for the correct use of Moodle as a support tool for face-to-face teaching so that this tool becomes a support tool for students' studies and does not cause information overload in them or encourage their absenteeism because all the subject material is on Moodle

Table 1. Questionnaire Round 1. Source: Self-made.

With the results of Round 1 and after the unification of the aspects that meant the same thing but that the experts named differently, Round 2 was carried out (Table 2), where the experts had to rate from 0 to 10 the importance of each aspect in said problem. The aspects were classified into 8 sections whose distribution was created with the help of ChatGPT (OpenAI, 2024).

Rate from 0 to 10 each of the aspects to be taken into account by teachers for the correct use of Moodle as a support tool for face-to-face teaching so that this tool becomes a support tool for students' studies and does not cause information overload in them or encourage their absenteeism because all the subject material is in Moodle

SECTION 1. Course Design and Organization

FACTOR	RATING (0-10)
<i>Clear structure: Organize the content in a logical and coherent way. Divide the course into well-defined modules or thematic sections.</i>	
<i>Learning objectives: Clearly establish and communicate the objectives of each module or activity, helping students understand what is expected of them.</i>	

SECTION 2. Interactivity and Participation

FACTOR	RATING (0-10)
<i>Interactive Activities: Include activities that encourage active participation, such as discussion forums, quizzes, surveys, and collaborative assignments.</i>	
<i>Feedback regular: Provide constant and constructive feedback on activities to keep students engaged and improve their performance.</i>	

SECTION 3. Balanced Workloads

FACTOR	RATING (0-10)
<i>Appropriate distribution: Plan and distribute tasks and assessments in a balanced manner throughout the course to avoid peaks of excessive workload.</i>	
<i>Time estimates: Indicate the estimated time needed to complete each activity, helping students manage their time effectively.</i>	

SECTION 4. Accessibility and Usability

FACTOR	RATING (0-10)
<i>Accessible resources: Ensure that all resources are easily accessible and compatible with different devices (computers, tablets, smartphones).</i>	
<i>Intuitive navigation: Maintain an intuitive user interface and avoid information overload on the platform so that students do not feel overwhelmed.</i>	

SECTION 5. Technical and Pedagogical Support

FACTOR	RATING (0-10)
<i>Training: Provide training for both teachers and students on the effective use of Moodle, ensuring that everyone knows how to take advantage of the tools available.</i>	
<i>Technical support: Establish technical support channels to resolve problems quickly and prevent technical difficulties from interfering with learning.</i>	



SECTION 6. Monitoring and Adaptation	
FACTOR	RATING (0-10)
Progress monitoring: Use Moodle's tracking tools to monitor student progress and detect potential difficulties early.	
Flexibility and adaptability: Be willing to adapt the course and activities based on student feedback and performance.	
SECTION 7. Effective Communication	
FACTOR	RATING (0-10)
Clear communication channels: Effectively use communication channels (forums, messages, announcements) to maintain fluid and transparent communication with students.	
Updates and feedback: Provide regular updates and feedback on student progress, keeping them informed and motivated.	
SECTION 8. Integration with Face-to-Face Teaching	
FACTOR	RATING (0-10)
Complement, not replace: Use Moodle to complement face-to-face teaching, not replace it. Make sure that online activities integrate well with face-to-face sessions.	
Support materials: Post support materials on Moodle that reinforce what has been covered in class, but avoid putting all course content exclusively on the platform to encourage class attendance.	

Table 2. Questionnaire Round 2. Source: Self-made.

Once the results of Round 2 were obtained, after reaching the average score for each of the aspects, Round 3 was carried out (Table 3). In this Round 3, all the aspects were presented again, accompanied by the score given in the previous round by the expert who had to complete the questionnaire again and the average score achieved by each of the aspects in the previous round. In this third round, each of the experts had the opportunity to reaffirm or rectify their answers, again rating from 0 to 10 the importance of each aspect in said problem.

Rate from 0 to 10 each of the aspects to be taken into account by teachers for the correct use of Moodle as a support tool for face-to-face teaching so that this tool becomes a support tool for students' studies and does not cause information overload in them or encourage their absenteeism because all the subject material is on Moodle

SECTION 1. Course Design and Organization			
FACTOR	RATING (0-10)		
	Antigua Valoración	Valoración media del grupo	Nueva Valoración
Clear structure: Organize the content in a logical and coherent way. Divide the course into well-defined modules or thematic sections.		9,80	
Learning objectives: Clearly establish and communicate the objectives of each module or activity, helping students understand what is expected of them.		9,07	
SECTION 2. Interactivity and Participation			
FACTOR	RATING (0-10)		
	Antigua Valoración	Valoración media del grupo	Nueva Valoración
Interactive Activities: Include activities that encourage active participation, such as discussion forums, quizzes, surveys, and collaborative assignments.		8,20	
Feedback regular: Provide constant and constructive feedback on activities to keep students engaged and improve their performance.		8,80	
SECTION 3. Balanced Workloads			
FACTOR	RATING (0-10)		
	Antigua Valoración	Valoración media del grupo	Nueva Valoración
Appropriate distribution: Plan and distribute tasks and assessments in a balanced manner throughout the course to avoid peaks of excessive workload.		9,87	
Time estimates: Indicate the estimated time needed to complete each activity, helping students manage their time effectively.		7,00	

SECTION 4. Accessibility and Usability			
FACTOR	RATING (0-10)		
	Antigua Valoración	Valoración media del grupo	Nueva Valoración
Accessible resources: Ensure that all resources are easily accessible and compatible with different devices (computers, tablets, smartphones).		6,27	
Intuitive navigation: Maintain an intuitive user interface and avoid information overload on the platform so that students do not feel overwhelmed.		9,80	
SECTION 5. Technical and Pedagogical Support			
FACTOR	RATING (0-10)		
	Antigua Valoración	Valoración media del grupo	Nueva Valoración
Training: Provide training for both teachers and students on the effective use of Moodle, ensuring that everyone knows how to take advantage of the tools available.		9,20	
Technical support: Establish technical support channels to resolve problems quickly and prevent technical difficulties from interfering with learning.		7,73	
SECTION 6. Monitoring and Adaptation			
FACTOR	RATING (0-10)		
	Antigua Valoración	Valoración media del grupo	Nueva Valoración
Progress monitoring: Use Moodle's tracking tools to monitor student progress and detect potential difficulties early.		7,80	
Flexibility and adaptability: Be willing to adapt the course and activities based on student feedback and performance.		9,27	
SECTION 7. Effective Communication			
FACTOR	RATING (0-10)		
	Antigua Valoración	Valoración media del grupo	Nueva Valoración
Clear communication channels: Effectively use communication channels (forums, messages, announcements) to maintain fluid and transparent communication with students.		8,80	
Updates and feedback: Provide regular updates and feedback on student progress, keeping them informed and motivated.		8,73	
SECTION 8. Integration with Face-to-Face Teaching			
FACTOR	RATING (0-10)		
	Antigua Valoración	Valoración media del grupo	Nueva Valoración
Complement, not replace: Use Moodle to complement face-to-face teaching, not replace it. Make sure that online activities integrate well with face-to-face sessions.		10,00	
Support materials: Post support materials on Moodle that reinforce what has been covered in class, but avoid putting all course content exclusively on the platform to encourage class attendance.		9,60	

Table 3. Questionnaire Round 3. Source: Self-made.

And in this Round 3, the experts only touched on the ratings of two aspects, the “Support materials” aspect, which went from a score of 9.60 to 9.93, and the “Flexibility and adaptability” aspect, which went from a score of 9.27 to 9.47.

This resulted in an increase in the importance of these two aspects in this problem according to the experts, where the “Support materials” aspect went from being the fifth most important to the second and the “Flexibility and adaptability” aspect maintained the sixth position, but its importance increased in terms of rating. The final average ratings of all aspects can be seen in Table 4.



SECTION 1. Course Design and Organization	
FACTOR	RATING (0-10)
Clear structure: Organize the content in a logical and coherent way. Divide the course into well-defined modules or thematic sections.	9,80
Learning objectives: Clearly establish and communicate the objectives of each module or activity, helping students understand what is expected of them.	9,07
SECTION 2. Interactivity and Participation	
FACTOR	RATING (0-10)
Interactive Activities: Include activities that encourage active participation, such as discussion forums, quizzes, surveys, and collaborative assignments.	8,20
Feedback regular: Provide constant and constructive feedback on activities to keep students engaged and improve their performance.	8,80
SECTION 3. Balanced Workloads	
FACTOR	RATING (0-10)
Appropriate distribution: Plan and distribute tasks and assessments in a balanced manner throughout the course to avoid peaks of excessive workload.	9,87
Time estimates: Indicate the estimated time needed to complete each activity, helping students manage their time effectively.	7,00
SECTION 4. Accessibility and Usability	
FACTOR	RATING (0-10)
Accessible resources: Ensure that all resources are easily accessible and compatible with different devices (computers, tablets, smartphones).	6,27
Intuitive navigation: Maintain an intuitive user interface and avoid information overload on the platform so that students do not feel overwhelmed.	9,80
SECTION 5. Technical and Pedagogical Support	
FACTOR	RATING (0-10)
Training: Provide training for both teachers and students on the effective use of Moodle, ensuring that everyone knows how to take advantage of the tools available.	9,20
Technical support: Establish technical support channels to resolve problems quickly and prevent technical difficulties from interfering with learning.	7,73
SECTION 6. Monitoring and Adaptation	
FACTOR	RATING (0-10)
Progress monitoring: Use Moodle's tracking tools to monitor student progress and detect potential difficulties early.	7,80
Flexibility and adaptability: Be willing to adapt the course and activities based on student feedback and performance.	9,47
SECTION 7. Effective Communication	
FACTOR	RATING (0-10)
Clear communication channels: Effectively use communication channels (forums, messages, announcements) to maintain fluid and transparent communication with students.	8,80
Updates and feedback: Provide regular updates and feedback on student progress, keeping them informed and motivated.	8,73
SECTION 8. Integration with Face-to-Face Teaching	
FACTOR	RATING (0-10)
Complement, not replace: Use Moodle to complement face-to-face teaching, not replace it. Make sure that online activities integrate well with face-to-face sessions.	10,00
Support materials: Post support materials on Moodle that reinforce what has been covered in class, but avoid putting all course content exclusively on the platform to encourage class attendance.	9,93

Table 4. Aspects to be taken into account by teachers for the correct use of Moodle as a support tool for face-to-face teaching and its ratings from 0 to 10. Source: Self-made.

5. Conclusions

The Moodle tool has become the support tool for face-to-face teaching in many degrees and universities, but this tool can have the opposite effect to support, and can lead to information and material overload in many students or can even encourage student absenteeism because all the subject material is in Moodle.

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In this way, this study has sought to find out the aspects to be taken into account by teachers for a correct use of Moodle as a support tool for face-to-face teaching, so that this tool becomes a support tool for students in face-to-face teaching and does not cause saturation in students due to excess information or encourage absenteeism because everything is in Moodle, thus managing to identify what should be focused on if we want to achieve optimal use of this tool and enrich the training process of students in degrees and universities that use Moodle.

Following the results obtained, these aspects have been distributed into 8 sections and the number of aspects identified has been 16. Below you can see these 16 aspects and where each of them should be addressed to achieve optimal use of Moodle:

SECTION 1. Course Design and Organization

1. Clear structure: Organizing content in a logical and coherent way is essential for students to easily navigate and understand the sequence of the course. It is advisable to divide the course into well-defined modules or thematic sections.
2. Learning objectives: Clearly establishing and communicating the objectives of each module or activity helps students focus on what is important and avoid confusion.

SECTION 2. Interactivity and Participation

3. Interactive Activities: Interactive activities (discussion forums, quizzes, surveys, collaborative assignments, etc.) encourage student participation and engagement, but they must be balanced so as not to overwhelm.
4. Feedback regular: Constant and constructive feedback is crucial to keep students motivated and improve their performance.

SECTION 3. Balanced Workloads

5. Appropriate distribution: Planning and distributing tasks in a balanced way is vital to avoid work peaks and ensure a manageable workload for students.
6. Time estimates: Indicating the estimated time for each activity helps students manage their time, although it can be difficult to estimate accurately for everyone (as some students may spend more time than others). It is recommended to indicate an average estimated time.

SECTION 4. Accessibility and Usability

7. Accessible resources: Ensuring that resources are accessible from different devices (computers, tablets, smartphones) is essential for the flexibility and accessibility of the course.
8. Intuitive navigation: An intuitive interface without information overload on the platform is crucial so that students do not feel overwhelmed and can focus on learning.

SECTION 5. Technical and Pedagogical Support

9. Training: Training in the use of Moodle is important for both teachers and students, ensuring that everyone knows how to use the tools available.
10. Technical support: Establishing good technical support is essential to quickly resolve any problems and minimise disruption to learning.

SECTION 6. Monitoring and Adaptation

11. Progress monitoring: Using tracking tools to monitor student progress allows you to detect difficulties



early and offer additional support.

12. Flexibility and adaptability: Adapting the course and activities based on student feedback and performance is important to keep the course relevant and effective.

SECTION 7. Effective Communication

13. Clear communication channels: Using communication channels (forums, messages, announcements) effectively ensures that students are informed and can easily communicate with the teacher and their peers.

14. Updates and feedback: Providing regular updates and feedback on student progress keeps students informed and motivated.

SECTION 8. Integration with Face-to-Face Teaching

15. Complement, not replace: It is crucial that Moodle complements face-to-face teaching and not replaces it, to encourage class attendance. Make sure that online activities integrate well with face-to-face sessions.

16. Support materials: Posting support materials on Moodle reinforces what has been taught in class, but it must be done in a way that does not discourage attendance. Avoid putting all course content exclusively on the platform to encourage class attendance.

With these aspects and indications, if teachers take them into account when using Moodle, the aim is to balance an effective use of Moodle as a support tool for face-to-face teaching, avoiding information overload and discouraging absenteeism, while ensuring a dynamic and accessible learning environment.

This research has been limited to the study of these aspects according to the opinion of teachers, but it is true that it can also be carried out according to the opinion of students, looking to see if they have a different opinion or can contribute some ideas to these aspects.

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