Co-funded by
the European Union

Games 4 You

Game-based digital learning. Playing to teach

ERASMUS+2023-ES02-KA210-ADU-000174J66

AIFED
Asociación de Innovación, Formación y Empleo para el Desarrollo Sostenible

ASEDDEDIPE

avanzo

CPMF

INDEX

Module 3

3. Tools and Technologies for Gamification

The use of gamification platforms is very useful in the field of education, particularly for adults, as it enables game mechanisms to be used and included in a learning environment. It is a major innovation in the field of education and training. By drawing on the psychological principles of games to stimulate learner commitment, this type of platform offers incentives to progress and succeed.
It is a way of influencing user behavior by making activities more attractive and increasing adult engagement. It's a way of creating tools that capture people's attention. This makes the activities more concrete and dynamic, avoiding the framework that could be far too theoretical.

3.1 Overview of platforms, software, and useful tools

3.1.1. Overview of Gamification Platforms

The first part presents gamification platforms, which are complete systems integrating various game elements to engage and motivate users in educational or professional contexts.

1.Learning Management Systems (LMS) with Gamification Features:

The LMS is software designed to manage an online platform, and is an effective tool for piloting and directing learning and management training. LMS centralizes learning resources, enabling flexible, personalized access for learners. It is a software package that uses a variety of pedagogical techniques, such as leaderboards and performance tracking.

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 web system created to manage virtual teaching environments, based on PHP and MySQL databases.

The first version was created in 2002 by Australian educator and computer scientist Martin Dougiamas, and its original name comes from the acronym for Module Object-Oriented Dynamic Learning Environment. Online teaching platforms such as Moodle are also called LMS.

Online teaching platforms such as Moodle are also called LMS.

How to install moodle on a server?

The moodle task is a task that can only be performed by a person who has knowledge of computers, servers and databases.

Requirements to install moodle

Web Server (Apache or Nginx): Apache is the most used.
Database (MySQL/MariaDB or PostgreSQL): MySQL/MariaDB are usually the most commonly used options
PHP (version 7.4 or higher)

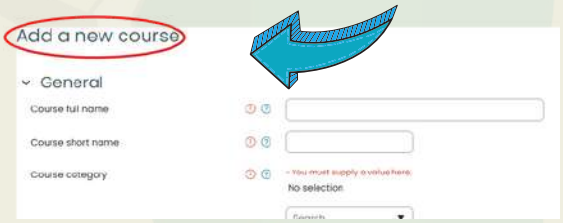
HOW TO USE MOODLE?

Teachers/Administrators:

1. CREATE A COURSE

1. **Login as Teacher:**
   - Access the Moodle platform and log in with your teacher credentials.
2. **Create a New Course:**
   - From the Moodle home page, click on the administration menu or the "Add a new course" button (this may vary depending on your settings).

   - Complete the basic details of the course:
     - Course Name: A clear, descriptive title.
     - Course Summary: Provide a brief description. Start and End Date: Set key dates.



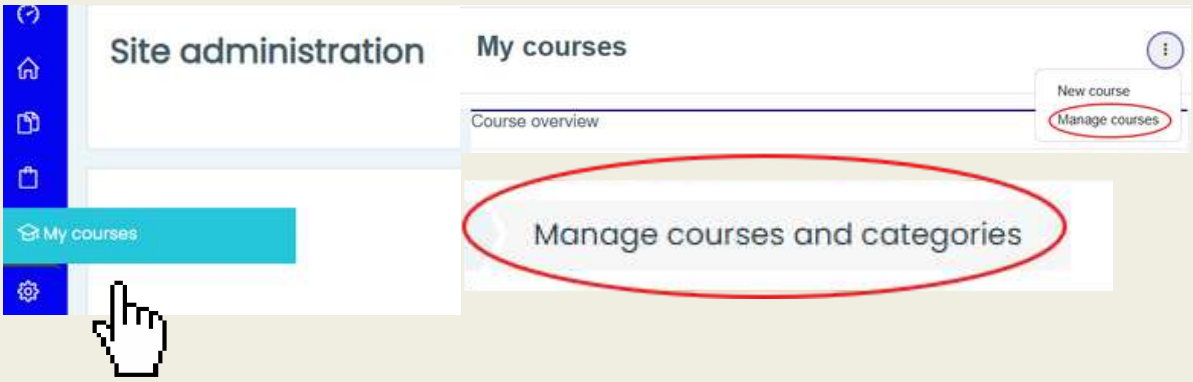
     - Course Format: Select the format (topic-based, weekly, etc.).
3. **Save Changes**:
   - Once the form is complete, save the course and it will be created.

HOW TO USE MOODLE?

Teachers/Administrators:

2. CREATE CATEGORIES

1. **Access the Site Administration:**
   - From the main page, go to “Site Administration” > “Courses” > “Manage Categories and Courses”.



2. **Add New Category:**
   - Click on "Add Category".
   - Give the category a name and select whether it will be a subcategory of an existing one.

3. **Save Changes**:
   - Save the category and you can now assign courses to it.

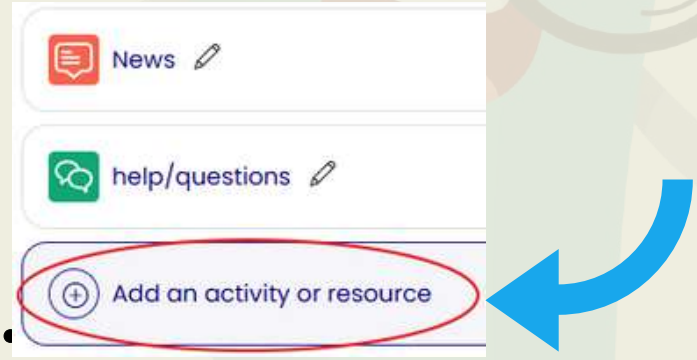
HOW TO USE MOODLE?

Teachers/Administrators:

3. CREATE TASKS

1. **Access the Course:**
   - From the "My Courses" area, select the course where you want to create the assignment.
2. **Activate Editing:**
   - In the course, look for the “Turn editing on” button (usually at the top right).

3. **Add Activity or Resource**:
   - In the corresponding topic or week, select "Add an activity or resource".



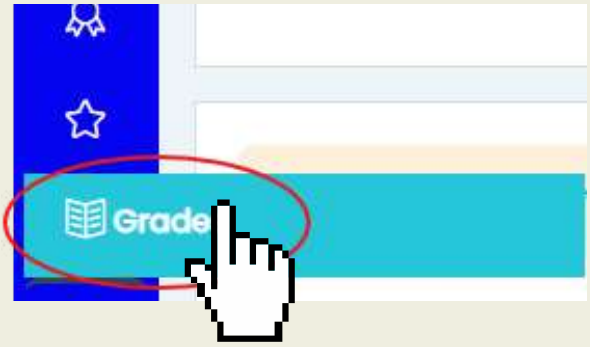
4. **Choose Task**:
   - Choose "Task" from the list of activities and click "Add".
5. **Configure the Task**:
   - Name: Enter a name for the task.
   - Description: Provides details on what students should do.
   - Due Date: Set the deadline date.
   - Submission Type: You can allow students to upload files or enter text online.

- Rating: Defines the type of rating.

6. Save Changes and Return to Course.

4. MANAGE GRADES

1. **Access the Grade Book:**
   - Within your course, go to “Grades” in the side administration menu.



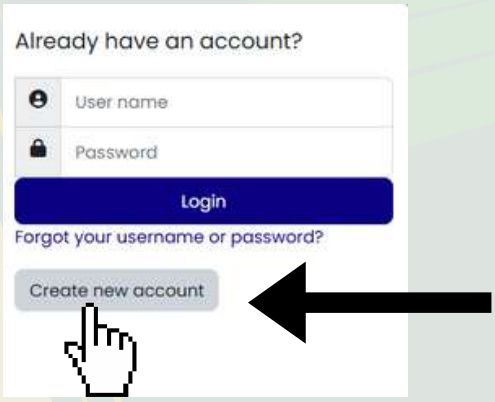
2. **Review, Rate or Export:**
   - Here you can view graded assignments, enter manual grades, or export grades.

HOW TO USE MOODLE?

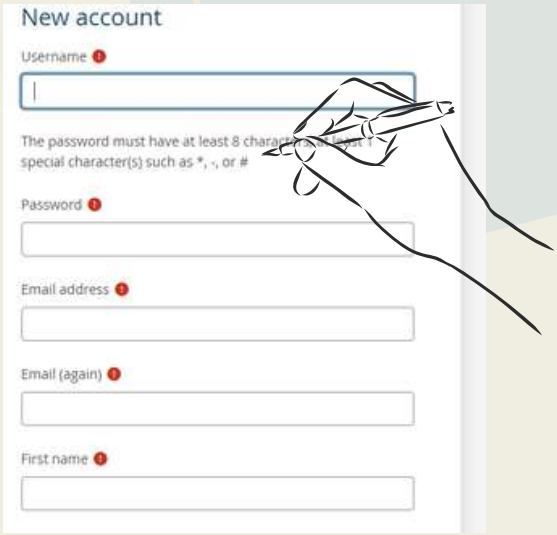
Students:

1. REGISTER ON THE MOODLE PLATFORM

1. **Access the Home Page:**
   - Go to the URL of your institution's Moodle platform.
2. **Create an Account:**
   - Look for the “Create new account” or “Sign up” button on the home page (this depends on how your institution’s Moodle is set up).



   - Complete the form with your personal information, such as name, email and password.
   - Check your email to confirm registration (if applicable).

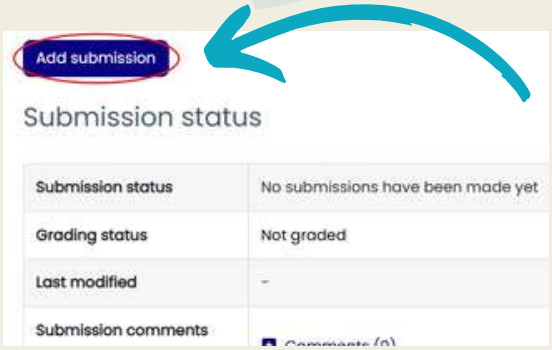


2. ACCESS A COURSE

1. **Login:**
   - Use your username and password to log in.
2. **Search for the Course:**
   - Once inside, use the course search engine or the list of courses you are enrolled in (in "My courses") to find a course.

3. UPLOAD A FILE TO A TASK

1. **Access the Task:**
   - Enter the course and look for the assignment in the corresponding section (weeks or topics).
2. **View Task Details:**
   - Click on the assignment name to see instructions, due date, and allowed formats.
3. **Upload the File**:
   - Click “Add submission” or “Upload file”.



HOW TO USE MOODLE?

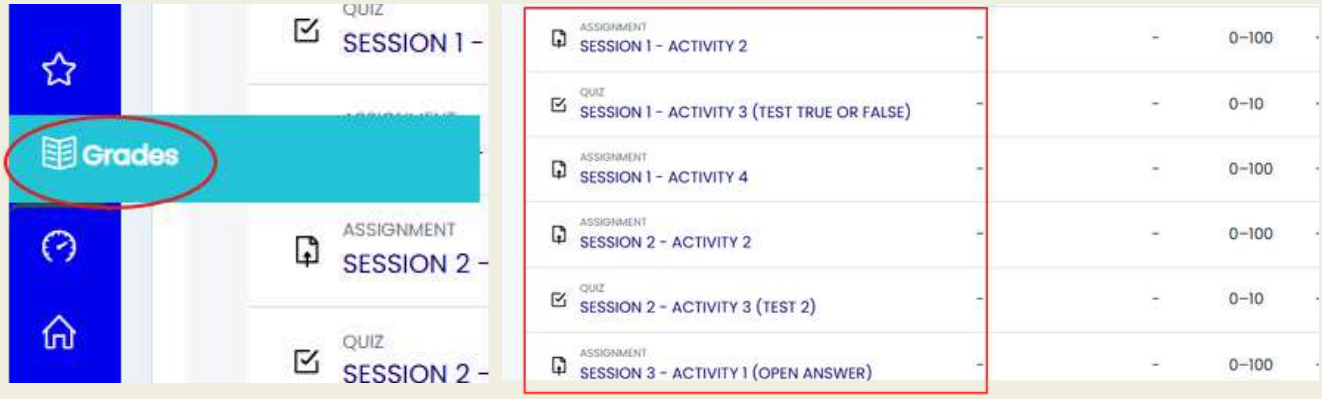
Students:

- Use the "Select File" button to choose the file from your device or drag it directly to the upload area.
- Confirm that the file has been uploaded correctly and click “Save Changes”.

4. **Submit for Grading:**
   - Depending on the task settings, you may need to click "Submit Task" to complete the process.

4. SEE NOTES AND COMMENTS

1. **View your Grades:**
   - In the side menu, look for the “Grades” section.
   - There you can see the notes of your activities



Blackboard is an interesting online learning tool for those seeking to teach or acquire new skills and knowledge. It is a Learning Management System (LMS) that is used online by different educational institutions with the aim of facilitating teaching and learning.

It has a wide range of features and tools that can be customised to achieve the objectives of the course in which it is to be used, facilitates the creation of reports and analysis of the activities carried out by students and also enhances the channels of communication and online collaboration between student and teacher.

Blackboard is divided into two different platforms.

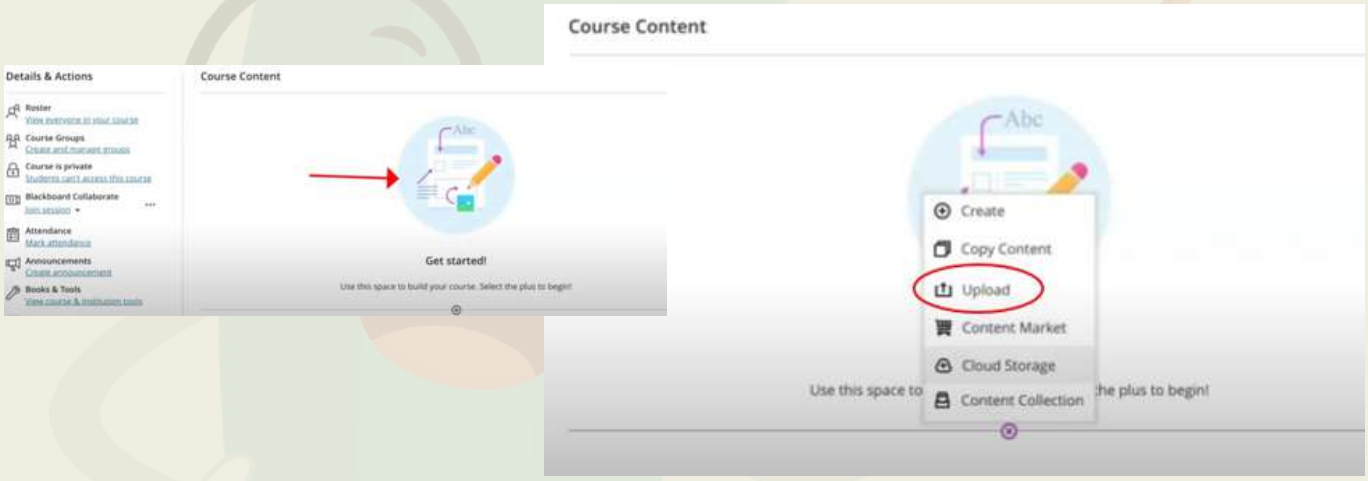
1. **‘Blackboard Learn’**, which is the main platform of Blackboard’s Learning Management System (LMS) for managing and sharing courses.
    - Through a web link, educators can carry out, among other things, reporting or communication.
2. **Blackboard Collaborate** is the platform for video calls (i.e. for teaching classes), and allows educators and students to connect in real time and collaborate online.

HOW TO USE BLACKBOARD?

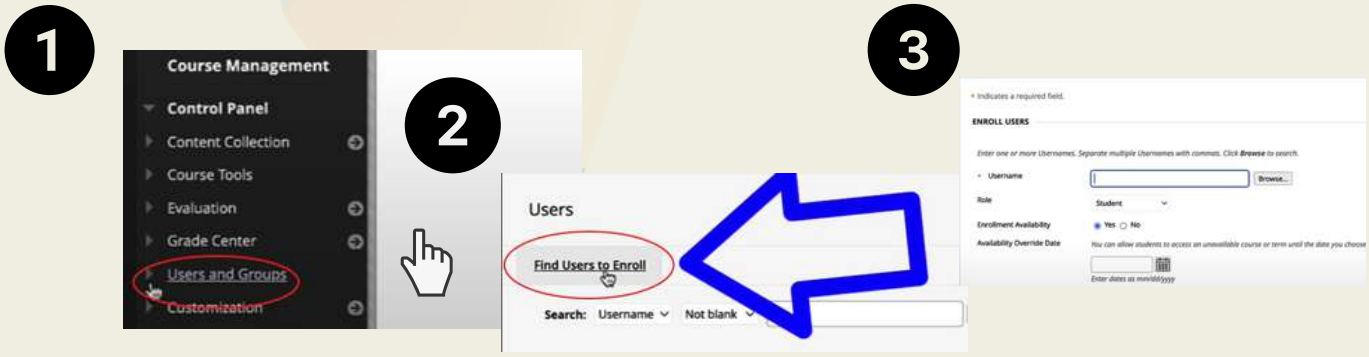
Teachers/Administrators:

1. CREATE A COURSE

1. **Login as Teacher:**
    - Log in to the platform through its website and create an online course.
        - Enter the basic information of the course: start and end date, name.
        - From the main menu, select the option ‘add content’ and upload the corresponding file (PDF, audio, web...).



2. **Add students:**
    - Add students from the option ‘manage user’ in the main menu.



HOW TO USE BLACKBOARD?

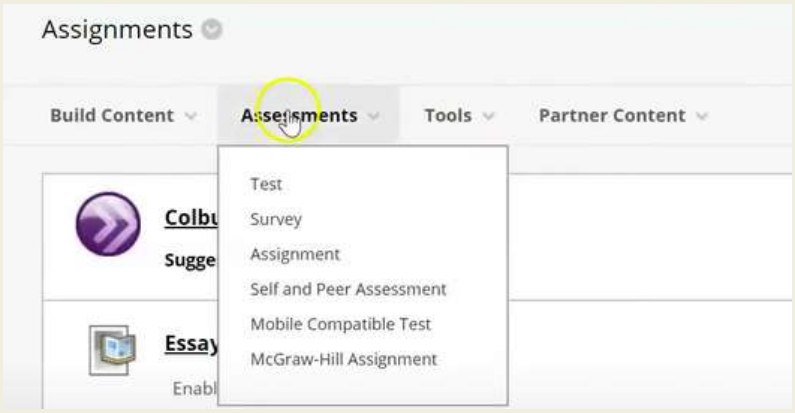
Teachers/Administrators:

2. CREATE A TASK

1. Go to the main menu, under ‘create a task’.

3. CREATE AN ASSESSMENT

1. The assessment must be chosen by the teacher when configuring the course through the main menu in the section ‘create assessment’.
    - The teacher will be able to choose between several assessment options: exam, surveys.



4. COMMUNICATION WITH STUDENTS

1. To encourage communication between teachers and students, the administrator can open the option ‘create chat’ in the main menu as a means of communication.

BLACKBOARD ALLOWS TO

Teachers/Administrators:

1. Create courses within the platform using a wide variety of resources.

2. Manage activities, assessments and track students.

3. Communicate with students through forums, workgroups and online chat.

4. Conduct tracking reports and analysis to track learner progress.

5. Carry out a more personalised education of the students as it has different tools such as the adaptation of content or individual assessments.

HOW TO USE BLACKBOARD?

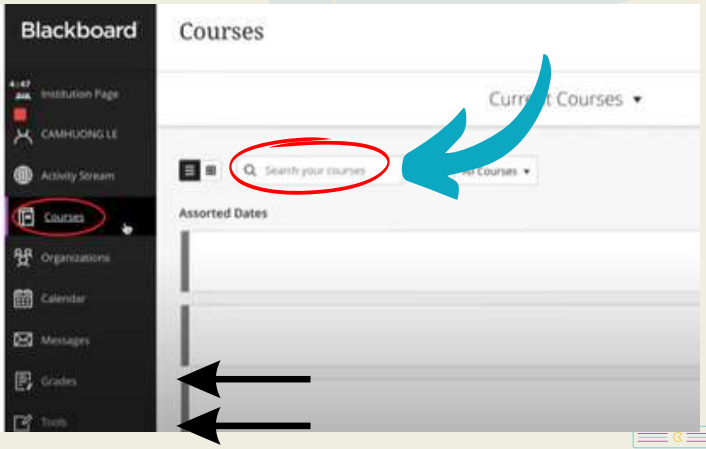
Students:

1. REGISTER ON THE BLACKBOARD PLATFORM

1. **Create an account:**
   - First, you must log in to the Blackboard Learn website of the respective institution.
   - Register on the right-hand side of the screen as a student with your email and password.

2. ACCESS A COURSE

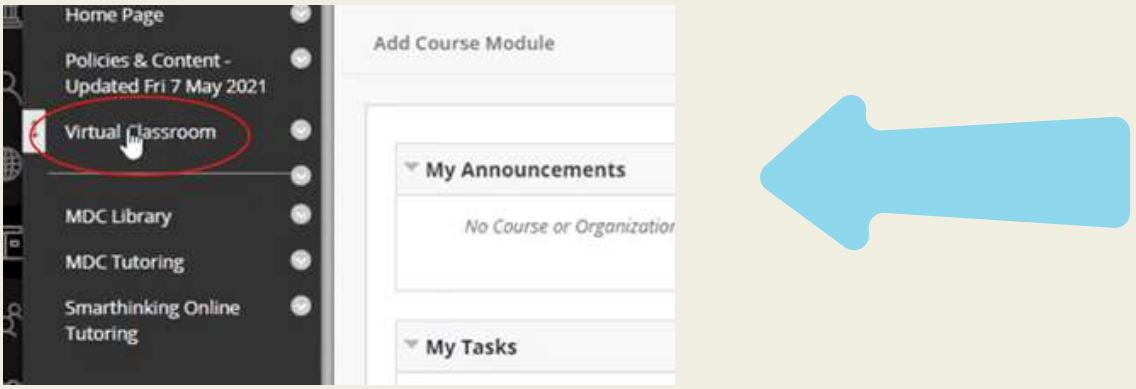
1. **Login:**
   - Use your username and password to log in.
2. **Search for the Course:**
   - You will have to wait for the teacher to add the content and add it to the course before you can start using it. On the left side of your screen, you will see all the information from grades to tools.



HOW TO USE BLACKBOARD?

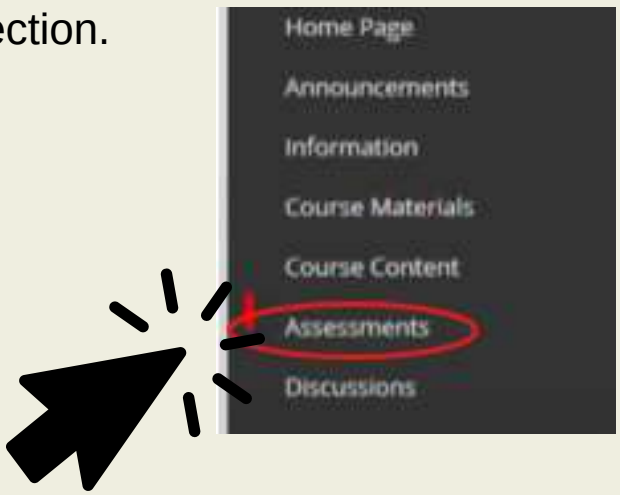
Students:

3. **Accessing the Course**:
   - Once you are inside the course, you will be able to access it through the ‘virtual classroom’ section.
   - After finding the courses they are in, you will be able to access it through the ‘courses’ section. There, you can select the section of teacher, date, completed courses.



3. UPLOAD AN ASSIGNMENT

1. **Access the Task:**
   - Students, by selecting tools and assignments on the right-hand side of their screens, will be able to publish assignments through the ‘assignments’ section.



4. COMMUNICATION OPTIONS

2. Students will be able to access the chats through the ‘course view’ tab. Students will find online chat, forums.

BLACKBOARD ALLOWS TO

Conclusion:

Blackboard is useful for learners, and especially for educators, because it is intuitive to use and centralises class materials, assignments, grading and communications on a single platform, facilitating learning management and interaction virtually.

Canvas is an interesting Learning Management System (LMS) that offers a dynamic and engaging option for learning. This web-based learning platform can be used for online, face-to-face or hybrid classes.

- To access this platform, users must register with their email account or they can create an account associated with their social media (Facebook, twitter...) and their password.
- What makes it one of the best platforms is its accessibility for all ages. The interface of the Canvas website is very intuitive. For both students and teachers, it has a fixed side menu that helps us not to get lost and to be always located in the page.

HOW TO USE CANVAS?

As for the **educator's** part, the workspace is wide and simple

- You should look at the left side menu and from there access "courses", section "create course".
- Once the course has been created and the students have been incorporated, the different modules that make it up can be added to add the information inside.
- It has different tools for working, for example, synchronous classes, uploading files, links... and other activities such as questionnaires or group work.
- From the menu you can also access the students in the class and see if they are active at the moment or what assignments they have handed in.

As a **student** the way to register is the same, through email or social networks and password.

- The menu also appears on the left side of the screen where you will see the courses you are enrolled in, and from there you will have access to various items such as files, grades obtained, discussion forums...

CANVAS’ FAVORABLE POINTS

One of the most favourable points of this LMS is that it has different apps:

- Canvas Student for students
- Canvas Teacher for teachers
- Canvas Parent for parents to follow their children’s development in the course.

These apps can be downloaded through the Play Store on the Android system or the App Store on the iOS system.

2. Dedicated Gamification Platforms:

Dedicated gamification platforms are software that enable certain organizations to design and integrate game-like, rather interactive elements into sectors such as education. It is a way of combining an educational tool with an interactive and entertaining one.

Quizizz, for example, is an online software platform that uses artificial intelligence to generate fun quizzes for participants. The aim is to make learning more fun and effective. Activities are generated from content that can be proposed directly by the teacher. The software uses gamification elements such as ranking points and badges to motivate participants. What's more, the fact that the results are directly available means that errors can be directly identified, enabling users to improve their own knowledge.

Kahoot! is a cloud-based quiz platform perfect for both students and teachers. Due to its playful nature, it allows new quizzes to be created from scratch, thus offering the possibility to customize the learning experience in a creative way tailored to the needs of students.

With over 40 million games already available, Kahoot! offers quick and easy access to a wide range of educational content, making it particularly suitable for hybrid or distance learning where time and resources are limited.

Operation of Kahoot! is intuitive: once a quiz has been created, players can join by entering a PIN code via the mobile app. Using their device as a remote control, they can easily answer the questions displayed on the screen. At the end of the quiz, a podium awards the participants with the highest score.

Although Kahoot! was designed primarily for educational purposes, it can also be used for simple entertainment. The idea behind it is to learn while having fun, even though the nature of the questions tends more towards reinforcement than deepening. However, the teacher or game moderator has total control over the pace of the quiz, allowing for necessary explanations and pauses when necessary.

Classcraft is a gamification platform that helps to develop classes through an online role-playing game, helping to improve the classroom environment by bringing technology closer to education in any subject and for any age group.

Based on team role-playing games, at the beginning of each game, students create their avatar by selecting a profession (warrior, mage or senator) that will grant them different powers. Groups of 4-5 players will be created who will have to work together to archive benefits. The actions taken by the students in the game will be reflected in real life, in their grades. These can be negative or positive. By gamifying the class, the contents of each subject are worked on in a more enjoyable way for the students.

One of the most positive aspects of this platform is that students do not have to register with their e-mail address, as they can do so by means of a code provided by the teacher, thus offering more security, especially in the case of minors. Another positive aspect is that by means of a personalised code, legal guardians can access their children's progress.

It has been proven that with the use of this platform, students complete tasks more regularly, that the classroom environment has improved, and that student participation has increased. We can affirm that Classcraft is a highly recommended platform for teaching.

3.1.2 Gamification Software

Gamification software focuses on the creation of interactive and entertaining content.

1. **Game Development Software:**

Game development software is an essential tool for creating video games. They offer functionalities for graphic design, programming, 3D animation and sound management, making it possible to develop games for a variety of platforms. Accessible to beginners thanks to numerous tutorials and an active community, these software packages facilitate rapid prototyping and the development of complex games. They enable creative ideas to be transformed into captivating, interactive experiences, all the more so as the software is licensed free of charge and easy to download.

EXAMPLES OF TOPICS:
- Professional development (e.g. virtual workshops for management development)
- Language and cultural training (e.g. language learning games with realistic dialogues, virtual trips to explore different cultures)
- Health and safety training (e.g. health promotion through fun activities, emergency management simulations)
- Technical and IT training (e.g. programming and coding games)
- Creative and artistic development (e.g. music and theatre projects in a playful form, games to promote creativity)

HOW TO CREATE GAMES FOR EDUCATING ADULTS?

1. Brainstorming and concept development:
   - Define target group: Who will play the game? What interests and needs does this target group have?
   - Develop game idea: What concept appeals to the target group? E.g. educational game, simulation game, entertaining game.
2. Planning and design:
   - Game mechanics and rules: Determine how the game works, what rules apply and what goals the players should achieve.
   - Story and characters: Developing a compelling story and interesting characters.
   - Graphics and sound: Creating/sourcing graphics, animations and sounds that fit the theme and style of your game.
3. Technical realisation:
   - Programming language and platform: choosing appropriate programming language for the game (e.g. JavaScript, Python) and platform (e.g. web, mobile).
   - Game development tools: Use tools and engines such as Unity, Unreal Engine or Godot to facilitate development.
   - Prototyping: Create prototypes of the game to test basic mechanics.
4. Testing and feedback:
   - Beta testing: have small group test game to find bugs and gather feedback.
   - Adjustments and improvements: Use feedback to improve the game/fix any issues.
5. Publishing and marketing:
   - Choose platforms: Choose platforms for publishing the game (e.g. Steam, App Store, Google Play).
   - Support: Offer support after the release.

SOME GAME DEVELOPMENT GRAPHIC TOOLS

Game development software helps individual developers, gaming companies and educational institutions to create, distribute and monetise games. These solutions often offer additional features such as user behaviour analysis, marketing and social features. It provides a development environment to create a game with a minimum of work. It takes care of everything: images, videos, animations, scenes, sound effects, game physics, etc.

Unity is intended for teams or individual developers who want to create 2D or 3D titles with first-class graphics.

- There is a free version with an integrated mini-game that can be downloaded and tried out before committing to larger projects and a subscription.
- There are trial versions of the paid plans as well as two free versions, one for students (under 16) and another for individuals who have made less than $100,000 in revenue or funding in the last year.
- Unity has an active community where tips are shared that can help with the game engine and overall game development.
- Games developed with Unity are licence-free and support multiple platforms, including virtual reality.
- Overall, Unity is suitable for most use cases, regardless of size and developer, whether new or experienced.

Unreal Engine is a versatile and powerful graphics engine that is suitable for both teams and individual developers who want to create 2D or 3D titles with first-class graphics.

- Used by industry professionals, generally not for beginners. However, Unreal has launched Blueprints, a visual scripting tool that helps non-programmers.
- It is intended for aspirants who are primarily aiming for triple-A level 3D visualisation and are willing to learn programming on the side.
- This game editor is coupled with a freemium asset marketplace run by Epic Games (the parent company) and the Unreal Engine user base. In addition to its capabilities, Unreal's strengths are its extensive documentation, large community and free tutorials.
- It is free to download and use until your game earns more than $1 million. After that, a licence fee of 5% is due.
- Ultimately, this is the most powerful game maker on this list, but it also requires maximum commitment from its users.

With **Construct**, 2D games can be developed without any programming knowledge. Javascript supports and helps you to familiarise yourself with the programming of games.

- Javascript is not tied to a specific game engine, so what you have learnt can also be used elsewhere.
- It has a pure web interface that can be run from any browser. When loaded, it runs even without an active internet connection.
- Construct describes itself as the best 2D game engine. It also has a number of 3D functions, including multi-dimensional objects and mesh distortion.
- This game engine also makes it easy to add advanced animations. The physics engine, built-in image editor, custom collisions, excellent pathfinding, etc. make it a favourite for beginners and experts alike.
- In addition, the free and paid add-ons enhance the gaming experience. All these benefits are coupled with instant previews without long delays and remote previews that you can get on various devices by scanning QR codes.
- Construct has a free version with significant limitations that can be tried out without payment or registration. The games created with Construct are 100% licence-free and without any profit sharing.

2. Gamified Training Software:

These platforms are designed for corporate training, new employee induction and skills development. These tools make training more flexible and accessible, while using game elements to keep learners interested and motivated.

TalentLMS is an e-learning management platform (LMS) that enables companies, educational institutions and training organizations to easily create, manage and distribute training programs. Thanks to its intuitive interface, users can design courses by integrating various types of content, such as videos, presentations, documents and interactive quizzes. Gamification features, such as badges, points and rankings, increase learner engagement by making the learning process more fun. What's more, TalentLMS provides detailed reporting and analysis tools to track learner progress and evaluate the effectiveness of training programs. The platform is also accessible on a variety of devices, enabling flexible, distance learning.

3.1.3. Useful Tools for Gamification

Gamification tools are specific applications designed to add game elements to specific tasks, such as creating badges, quizzes or tracking progress, often as a complement to existing platforms or software.

1.Badge and Certificate Creators:

Badges and certificates recognize the achievements of learners. They are a way of attesting to the skills acquired.

Credly is an online platform specializing in the recognition and validation of skills through digital badges. Used by companies, educational institutions and certification bodies, Credly enables the creation, management and distribution of badges that attest to skills acquired, training completed or professional achievements. Digital badges are visual and formal representations of skills, including information on what has been achieved, by whom and how. These badges can be shared on social networks, or integrated into professional profiles such as LinkedIn. Credly thus facilitates the formal recognition of skills that can be easily shared. In addition, the platform offers analysis tools to track the impact of badges and certification programs, enabling organizations to measure the effectiveness of their skills development initiatives. Indeed, there's a real follow-up to the use of this platform.

2. Quiz and Polling Tools:

These tools facilitate the creation of quizzes, polls and surveys, with real-time feedback capabilities. These are activities that actively involve participants.

Mentimeter is an interactive online platform that transforms presentations into engaging, collaborative experiences. Used by teachers, trainers, lecturers and professionals, it is a platform for incorporating interactive questions, live polls, quizzes and other interactive elements into presentations. Participants can interact in real time from any Internet-connected device, facilitating engagement and participation. Results are displayed instantly, offering immediate feedback.
What's more, Mentimeter's highly intuitive interface makes it easily accessible to the widest possible range of people and contexts.

3. Interactive Presentation Tools:

These tools enable the creation of interactive slides, promoting collaboration between individuals while offering intuitive functionality.
Nearpod is an interactive educational platform that enables teachers to create and share immersive lessons with their students through online collaboration.

It aims to enhance interactivity and engagement in the classroom. Nearpod features multimedia elements such as videos, quizzes, polls, simulations and virtual reality activities in lessons.
Nearpod also offers collaborative tools, such as in-class discussions and interactive whiteboards, facilitating active participation. Teachers can track the progress of students' work with immediate, detailed reports. It's also one that's accessible for both classroom and distance learning.

• Progress Tracking and Analytics Tools:

These tools enable learners' progress to be monitored directly, providing direct feedback to encourage progress.

ClassDojo is a communication and classroom management platform designed to strengthen the connection between teachers, students and parents. It's a global community of over 50 million teachers and families working together around learning. It enables teachers to monitor and manage student behavior by awarding positive or negative points, customized according to specific criteria such as participation or respect. ClassDojo also facilitates communication and sharing through videos, photos, instant messages and class announcements, enabling parents to stay informed about their children's progress and school activities. Students can create digital portfolios to share their work and projects, offering direct visibility to parents and teachers.

Accessible from computers, tablets and smartphones, ClassDojo is easy to use and emphasizes data security and confidentiality. In fact, it's a software that enhances student engagement, strengthens communication between parents and teachers, and facilitates classroom management in an interactive and secure way.

3.1.4. Selection Criteria for Gamification Technologies

When selecting gamification technologies, several criteria must be carefully evaluated to ensure their suitability and effectiveness in an educational context. Each of the criteria plays a critical role in determining how well a gamification tool can enhance the learning experience, motivate students, and integrate into existing educational frameworks. By focusing on these criteria, educators can make informed decisions that maximize the benefits of gamification in their teaching practices. Criteria such as:

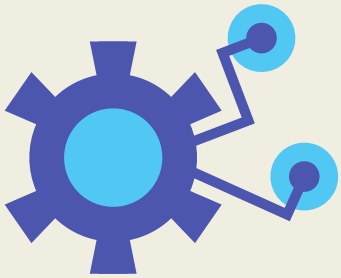
Alignment with Learning Objectives

Alignment with learning objectives is a fundamental when selecting gamification technologies. This alignment ensures that the features and mechanics of gamification tools effectively support specific educational goals, ultimately enhancing engagement and learning outcomes.

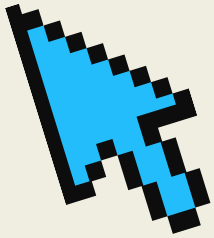
It is essential to clearly define the learning objectives. These could include learning goals such as improving knowledge retention, fostering critical thinking, or enhancing collaboration among learners. For example, a goal might be to develop analytical skills by encouraging learners to evaluate different perspectives on a given topic.

Once the learning objectives are established, the next step is to evaluate how the gamification technology can facilitate these goals. Key features to consider include:

- **Points Systems and Badges:** Many gamification platforms, like **Kahoot**, utilize points systems that reward users for their achievements. Earning badges for specific accomplishments can motivate learners to engage more deeply with the content and strive for continuous improvement.



- **Challenges and Quests:** Technologies such as **Classcraft** allow users to undertake quests that involve solving real-world problems or completing curriculum-related challenges. This approach promotes critical thinking and teamwork, making learning more interactive and engaging.



- **Immediate Feedback:** Tools like **Edmodo** provide real-time feedback on quizzes and assignments. This immediate feedback helps learners understand their progress, identify areas for improvement, and adjust their study strategies accordingly.

Additionally, ensuring that gamification technologies align with established pedagogical frameworks can enhance their effectiveness. For instance, mapping activities to frameworks like Bloom'sTaxonomy can help ensure that the technology promotes a range of cognitive skills, from basic recall to higher-order thinking.

Aligning gamification technologies with learning objectives is essential for maximizing their impact. By ensuring that the features and mechanics of these technologies support clearly defined goals, users can enhance engagement and create a more effective and enjoyable learning experience.

Ease of Use

Ease of use is a critical factor when selecting gamification technologies, as it influences both user engagement and overall effectiveness. A user-friendly interface is essential, as it allows both educators and learners to navigate the platform effortlessly. An intuitive design reduces the learning curve, allowing users to focus on the content rather than struggling with the technology. For example, platforms like Quizizz and Kahoot! are designed with simple navigation, ensuring that users can quickly access features, create

quizzes, and view results without unnecessary complications.

In addition to interface design, effective training and onboarding processes are crucial. Gamification tools should offer comprehensive tutorials, guides, and resources that help users quickly become proficient. For example, Classcraft provides onboarding materials and videos that guide teachers and students through its features, facilitating a smooth transition to gamified learning.

Ongoing support is also essential. Technologies that provide robust customer service, online help centers, and community forums greatly enhance the user experience. For example, platforms like Edmodo offer extensive resources and a supportive community where users can ask questions and share experiences, creating an environment conducive to learning and collaboration.

Cost and Accessibility

Cost and accessibility are vital considerations in selecting gamification technologies. Understanding the total cost of ownership is crucial; this includes initial purchase costs, subscription fees, and any additional expenses related to training or support. Everybody must evaluate whether the financial investment aligns with their budget constraints.

Accessibility is intertwined with cost. It is essential to ensure that the selected technology is affordable and available to all students. Platforms that offer free or tiered pricing models can accommodate various budgets. For example, Kahoot! offers a free version with the option to upgrade for premium features, making it accessible to a wide range of users.

Additionally, consider whether the technology can be used on multiple devices, including smartphones, tablets, and computers, to facilitate learning in various environments. This flexibility increases accessibility, allowing users to interact with content at their convenience.

Integration and Compatibility

When choosing gamification technologies, compatibility and integration are crucial factors because they establish how effectively a tool works with current platforms and educational systems. An effective gamification strategy should work in unison with existing educational technologies, content management systems, and learning management systems (LMS). Because of this interoperability, teachers can use gamified components like leaderboards, badges, and quizzes without interfering with their current workflows.

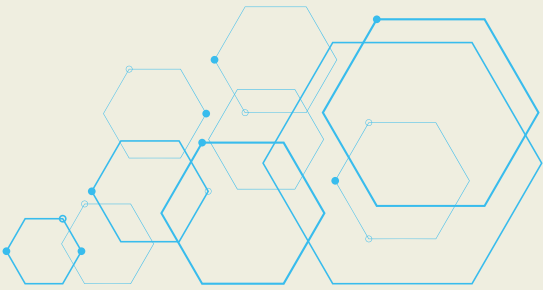
Examples of systems that provide integration possibilities with different third-party applications are Edmodo and Google Classroom. This keeps the learning environment unified while allowing teachers to add gamified elements to their classes. Another crucial component is the capacity to share data between systems; successful gamification tools should enable data import and export allowing teachers to monitor development and evaluate results on several platforms. This feature improves the whole educational process by offering insightful data on student performance and involvement.

Scalability and Flexibility

Scalability and flexibility are critical for gamification technology to evolve and adapt to changing educational needs. A scalable system can handle a growing number of users, whether in a single classroom or throughout the entire institution. This is particularly important for businesses and educational institutions that have room to expand or that require the technology in a variety of settings.

Classcraft and similar platforms may readily grow to accommodate additional users and are made to support a range of class sizes. Because of its scalability, teachers can use gamification techniques in both large and small groups without losing their impact. Equally crucial is flexibility, which enables teachers to modify the gamification process to fit particular learning goals and accommodate various teaching philosophies. With the use of technologies that provide customizable features, educators can adapt the learning process to the needs of their pupils. Examples of these features include diverse material formats, configurable game dynamics, and various incentive systems.

A gamification platform should also make upgrades and improvements simple. The technology should be flexible enough to accommodate new features and functionalities that complement developing pedagogical trends as educational practices change. This flexibility guarantees This flexibility guarantees that gamification techniques continue to be applicable and successful in achieving learning objectives.



In conclusion, the selection of gamification technologies in educational contexts necessitates careful consideration of multiple criteria to ensure their effectiveness and alignment with educational goals. By focusing on alignment with learning objectives, ease of use, cost and accessibility, integration and compatibility, as well as scalability and flexibility, educators can make informed decisions that enhance the learning experience. As the educational landscape continues to evolve, leveraging the right gamification tools can foster deeper engagement, promote critical thinking, and support diverse learning needs, ultimately contributing to a more dynamic and effective educational environment.

All learning tools and their advantages

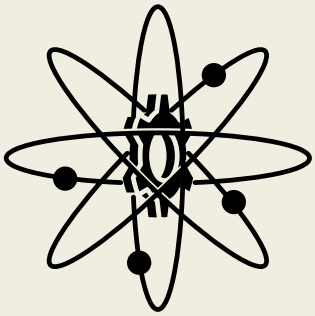
Learning Tool	Advantages
MOODLE	**MOODLE** helps manage online learning spaces adapted to the needs of teachers, students and administrators open-source learning platform that allows easy creation and management of online courses. It offers features like quizzes, forums, and gradebooks, and is highly customizable to suit different educational needs.
Blackboard	**Blackboard** is useful for learners, and especially for educators, because it is intuitive to use and centralises class materials, assignments, grading and communications on a single platform, facilitating learning management and interaction virtually.
Canvas	This web-based learning platform can be used for online, face-to-face or hybrid classes.
Quizizz	Teachers can create custom content, while gamification elements like points and badges keep participants engaged. Instant feedback helps learners identify errors and improve knowledge quickly.

Learning Tool	Advantages
Kahoot!	**Kahoot** allows users to create custom quizzes from scratch, enabling a personalized and creative learning experience. This flexibility helps tailor content to meet the specific needs of students, making learning more engaging and interactive.
Classcraft	**Classcraft** helps to develop classes through an online role-playing game, helping to improve the classroom environment by bringing technology closer to education inany subject and for any age group. Another advantage is that students do not have to register with their email address, as they can do so using a code provided by the teacher, thus offering more security, especially for minors."
TalentLMS	**TalentLMS** allows organizations to easily create, manage, and distribute training programs. It supports various content types like videos, presentations, and interactive quizzes. Gamification features such as badges, points, and rankings boost learner engagement. The platform also offers detailed reporting tools to track progress and evaluate training effectiveness.

Learning Tools	Advantages
Credly	**Credly** is an online platform that allows organizations to create, manage, and distribute digital badges to recognize skills, achievements, and completed training. These badges can be easily shared on social media and professional profiles like LinkedIn. **Credly** also provides tools to track the impact of badges and certification programs, helping organizations measure the effectiveness of their skills development initiatives
Mentimeter	**Mentimeter** enhances presentations by incorporating live polls, quizzes, and interactive questions. It allows participants to engage in real time from any internet-connected device, fostering collaboration and active participation. Results are shown instantly, providing immediate feedback to both presenters and participants
Nearpod	**Nearpod** offers multimedia features like videos, quizzes, polls, and virtual reality in lessons, enhancing engagement. It includes collaborative tools like discussions and interactive whiteboards for active participation. Teachers can track student progress with real-time reports, and it's accessible for both classroom and distance learning.

Learning Tools	Advantages
ClassDojo **ClassDojo**	**ClassDojo** allows teachers to monitor student behavior through customizable points for participation or respect. The platform enables communication via videos, photos, messages, and announcements, keeping parents informed. Additionally, students can create digital portfolios to share their work, offering transparency and direct access to progress for both parents and teachers.

BIBLIOGRAPHY



Web links:

- https://www.classdojo.com
- https://nearpod.com
- https://www.mentimeter.com
- https://info.credly.com
- https://www.talentlms.com
- https://unity.com/fr
- https://quizizz.com/?lng=fr
- https://www.gamify.com/what-is-gamification
- https://www.interaction-design.org/literature/topics/gamification
- https://www.ispring.es/blog/what-is-lms
- https://medium.com/@projectmanagementandleadership/game-development-tools-and-software-1601420437bc
- https://www.bbc.com/future/article/20121204-can-gaming-transform-your-life
- https://help.blackboard.com/Learn/Student
- https://www.instructure.com/canvas
- https://intef.es/observatorio_tecno/classcraft-convierte-la-clase-en-una-aventura-epica/
- https://help.blackboard.com/Learn/Student/Ultra/Getting_Started/Log_in_to_Learn

Bibliography:

- Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Longman.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: defining" gamification". Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments (pp. 9-15).
- Kapp, K. M. (2012). Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education. Pfeiffer.
- Lee, J. J., & Hammer, J. (2011). Gamification in education: What, how, why bother? Academic Exchange Quarterly, 15(2), 1-5.
- Mekler, E. D., Brühlmann, F., Tuch, A. N., & Opwis, K. (2017). Towards understanding the effects of individual gamification elements on intrinsic motivation and performance. Computers in Human Behavior, 71, 525-534.
- Molina, B. (2023, 20 noviembre). Blackboard qué es y cómo funciona: Todo lo que necesitas saber. Digital Experience School. https://www.dexs.es/blackboard-que-es-como-funciona-pros-contras/
- Romero, M., & Barberà, E. (2011). E-learning and Gamification: The New Trend in Education. International Journal of Engineering and Technology, 3(1), 135-139

Co-funded by the European Union

Free Licence

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.