

GAMIFICATION

Gamification incorporates elements of game design to take advantage of them in the educational context. It is not about using games themselves but taking some of their principles or mechanics such as points or incentives, narrative, immediate feedback, recognition, freedom from making mistakes, etc., to enrich the learning experience

(Deterding et al, 2011; Kim 2015)

Gamification is a very widespread term in the educational world in recent years, however, there is a lot of confusion regarding its meaning, so it is important to differentiate different concepts that seem synonymous and are not. According to the Observatory of Educational Innovation of the Tecnológico de Monterrey (EduTrends. Gamification in Education, 2016), there are differences between Game-Based Learning (GBL), Serious Games and Gamification.

The GBL makes generally use of games that already exist, whose mechanics are already established, and are adapted so that there is a balance between the subject of study, the game and the ability of the player to retain and apply what is learned in the real world (EdTechReview, 2013).

They seek to influence the resolution of real problems in manufactured environments that simulate real life. Although they can be fun, this is not the intention for which they are created (Wouters, van Nimwegen, van Oostendorp & van der Spek, 2013).

How to implement it

In education you must consider the following factors to design gamification:

- ▶ **Context:** Identifies the characteristics of the students, their interests and needs, as well as the personal, material, and technological resources available.
- ▶ **Timing.** Decide if you are going to spend a whole semester, several weeks, 2 or 1 session a week.
- ▶ **Narrative.** If anything differentiates gamification from the use of games in class, it is that there is a narrative as a common thread of all the activities and events created for gamification.
- ▶ **Relationship with the curriculum.** Define the objectives of gamification (of the game or narrative) and the curricular contents that will be worked.
- ▶ **Gamblers.** Decide it will be an individual or group work.
- ▶ **Game components:** This includes the digital platform(s) on which the game will be mounted and the different tasks or challenges and evaluation systems.
- ▶ **Elements of the game:** To design a Gamification strategy it is not necessary to consider all the elements indicated below, but to take those that due to their characteristics may be more valuable for the learning experience that is sought to achieve.

Some of the aspects and elements of the game indicated by the **Observatory of Educational Innovation of the Tecnológico de Monterrey (2016)** that describe them are the following:

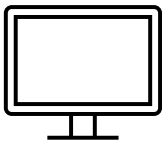
- ▶ **Goals and objectives:** Challenges, missions, epic challenges.
- ▶ **Rules:** Game restrictions, assigning turns, how to earn or lose points, stay alive, complete a mission, or achieve a goal.
- ▶ **Components of the narrative:** Identities, characters or avatars; worlds, narrative scenarios or three-dimensional environments
- ▶ **Freedom to choose:** Different routes or squares to reach the goal, options to use powers or resources.
- ▶ **Freedom to make mistakes:** Multiple lives, restore or restart points, unlimited number of possibilities.
- ▶ **Rewards:** Virtual coins or resources, lives, equipment, access items, limited powers.
- ▶ **Feedback:** Visual cues, signs of correct or incorrect response or behaviour, progress bars, warnings about risks that are taken when performing a certain action, statistics of the player's performance.
- ▶ **Visible status:** Badges, points, achievements, results obtained, leaderboard.
- ▶ **Cooperation and competition:** Teams, guilds, help from other participants, areas of social interaction, communication channels, bartering, battles, combats, leaderboard.
- ▶ **Time restriction:** Countdown; to be able to make a profit only in a certain time.
- ▶ **Progress:** Tutorials for initial skill development, experience points, levels, progress bars, and access to blocked content.
- ▶ **Surprise:** Random rewards, Easter eggs (hidden features), special events.

How to assess and evaluate it

Qualify. You can enter online questionnaires that allow you to visualise the progress of your students quickly and easily. There are many digital tools for this purpose:

- ▶ **Socrative.** It is a formative assessment tool that favours the real-time participation of students. It allows to create multiple-choice, true, or false or short-answer questionnaires and include a ranking of results.
- ▶ **Kahoot.** It is a free platform that allows you to create question and answer games quickly and easily. This tool rewards those who obtain the highest score, placing them at the top of the ranking.
- ▶ **Mentimeter, Nearpod, Wooclap**
- ▶ **Flipgrid.** The social skills and competencies associated with this methodology will be evaluated by rubric or watch list.

Resources



- ▶ [A gamification framework to enhance students' intrinsic motivation on MOOC](#) (Anwar, Salam, Saputro, & Zakaria , 2019).
- ▶ [Fostering Engagement with Gamification: Review of Current Practices on Online Learning Platforms.](#) (Hansch, Newman & Schildhauer, 2015).

Tools

In Moodle (created with the H5P tool)

Drag and drop

The Drag and drop is a task type that can be created with H5P tool in Moodle. It enables students to drag a piece of text or an image and drop it on one a corresponding drop zone.



Crosswords

Crossword puzzle is a type of word jigsaw puzzle. The purpose of the puzzle is **to encourage persons to form words in the grid based by answering questions**. This tool can be created with the H5P tool.

			1	A								
				B								
				S								
				T								
				R								
			2	A	L	G	O	R	I	T	H	M
		3		C								
				T								
				I								
			4	O								
				N								

Across

2 Sequence of instruction (8)

3 breaking down complex problems (8)

4 ...

Down

1 Hide unnecessary details (11)

3 Doing same process again and again (8)

Drag the words

Drag the word to (created with H5P) enables users to drag words into blanks in sentences.

Drag the words into the correct boxes

1. is the step that comes before programming.
2. Computers can be used to help us to solve problems.
3. There are key concepts to computational thinking.
4. Decomposition is the breaking down a complex problem or system into smaller, more manageable parts.
5. The Abstraction is focusing on the important information only, ignoring irrelevant detail.
6. Algorithms are developing a step-by-step solution to the problem, or the rules to follow to solve the problem.
7. The is looking for similarities among and within problems.
8. You can divide any task like brushing teeth, drinking water, washing a face into the tasks.

Fill in the blanks

In the fill in the blanks question type the users can fill in the missing word in a sentence. This task can be created with H5P too.

Fill in the missing words

1. MS Excel is spreadsheet software.
2. Formulas in Excel start with .
3. function in MS Excel worksheet represents the total of all entries in the cell(s).
4. function in MS Excel worksheet represents the average of all entries in the cell(s).
5. function in the MS Excel worksheet represents the maximum of all entries in the cell(s).
6. function in MS Excel worksheet represents the minimum of all entries in the cell(s).
7. The intersection of row and column is called a .
8. Sheet option is used to lock all of the cells from editing in a workbook.
9. The is used to add a note or explain a formula in a cell.
10. A is a powerful tool that allows you to visually display data in a variety of different graphical formats.

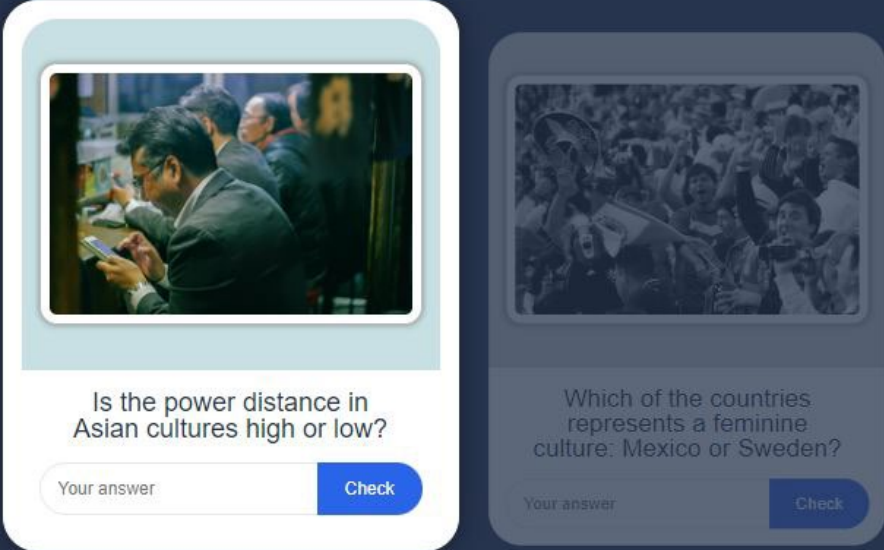
H5P

Flash cards

H5P flashcards have images paired with questions and answers.

Week 4. Test your knowledge

1 / 2



Is the power distance in Asian cultures high or low?

Your answer

Which of the countries represents a feminine culture: Mexico or Sweden?


Your answer

Progress bar and navigation arrow.

Image pair

Image pair question type allows teachers to create pairs of images to be matched.

Drag images from the left to match them with corresponding images on the right.








Input Device Output Device  Hardware Software

Image choice

In the image choice question type, the students select the image that represents the right answer.

Which of the following are the Input Devices.



Check

Mark the word

Mark the words allows teachers to create challenges where the user is to mark specific types of verbs in a text.

Mark the word

Mark the word which is related to inserting background.

The reward is given to someone when they pass a level in a game.

Character is any person, animal, or figure represented in a game.

In a game, there should be different challenges that force players to make a lot of effort.

Sprite is known for each object available on the stage.

To insert background in a scratch we use the backdrop option.

By default, the sprite stage has a blank background.

The stage is known for the platform where animation is created.

Check

[Reuse](#) [Embed](#)

Quiz

The quiz tool allows to create challenges where the user is to mark specific types of verbs in a text using the finances of a one year at the time.

Which of the berries listed below are berries you can pick in the wild?

- Strawberry
- Blueberry
- Cloudberry
- Raspberry
- Halle Berry
- Cocktail cherry

✓ Check



Interactive book

Interactive book tool allows users to organise together different types of interactive content like interactive videos, questions, course presentations and more on multiple pages under chapters.

The screenshot shows an interactive book interface. At the top, there is a navigation bar with a hamburger menu icon, the text "Drag & Drop", and a page indicator "4 / 7" with left and right arrow icons. On the left side, there is a sidebar menu titled "Interactive Book" with several items: "What is a Website?" (selected), "Single Choice", "Domain Extension", "Drag & Drop" (expanded), "Drag & Drop", "Web Browser", and "Drag & Drop". At the bottom of the sidebar is a "Summary & submit" button. The main content area is titled "Drag and Drop" and features a wooden plank background. In the center, there are five overlapping grey boxes containing domain extensions: ".edu", ".uk", ".gov", ".com", and ".org". On the right side, there is a vertical list of five white boxes with labels: "Organization website", "Government website", "Commercial website", "Country-specific website", and "Educational website".

Tools outside Moodle

Digital media:

1. **MyClassGame:** A free software web application that allows you to create gamified cooperative projects. That is, applying gamification strategies when using methodologies such as Project-Based Learning (PBL) and Cooperative Learning.
Its navigation is very simple: the class is created (it allows you to import the list from Google Classroom so you do not have to register the students again), the teams are created, which will work cooperatively, and the components of the game are detailed (events, challenges, penalties, reinforcements, badges, etc.).
2. **Minecraft: Education Edition** is a Microsoft platform that allows you to build educational experiences through the generation of “worlds”. The Education version includes the possibility of playing individually or multiplayer, favouring group learning, and tools for evaluation.
3. **Classcraft** is a platform for creating guided role-playing games. Includes challenging characters and points system.
4. **Genially** is a widely used tool to create animated resources, presentations and interactive images and also offers templates that you can adapt to your needs to create gamified experiences.

Create avatars. There are several websites that allow you to create avatars in a simple way e.g. [Avatar Maker](#).

Create playful activities: create activities with your content from game templates and timed quizzes:

1. **LearningApps.** Very simple to use website with which to create interactive activities (alphabet soup, crossword puzzle, puzzle, paragraphs with blanks, couples game, ...) that allows you to include text, image, audio and video. In addition, there is a repository created by other users organised by subjects.
2. **EducaPlay.** Global educational platform that allows you to create and share educational multimedia activities. Relate, sort, dictate, questionnaires, are some of the activities you can create with this website.
3. **Genially.** This website contains numerous templates that will make you gamify your class or evaluation activities. Trivial, game of the goose, breakouts, roulette, are just some of the examples of games to create with your contents.
4. **Decktoy.** It is a web tool through which gamified itineraries can be created for students. The activities are linked within a circuit, so that progress cannot be made without completing the previous ones.

Create Cards: Generate cards, with different aesthetics, to assign roles and “powers” to your students.

Create Documents: Customise documents to streamline the game.

Generate QR code: Use QR codes to generate curiosity, “hide” documents or clues.

Extra elements: It introduces other characteristic elements of some games, knowing that time, for example, can generate stress and retract the student’s response.

Tools for the design of your **escape room or break out**:

- ▶ [Digital lock generator](#)
- ▶ [Timer](#)

Reward system: Despite being an extrinsic motivator, you can hand out points, give medals or use a leaderboard with your students when they have achieved a challenge or completed a part of it. It is what is called as PBL, which responds to the acronym Points, Badges and Leaderboards.

Resources

Example exercises on the H5P website, similar to what can be created on Moodle:

- ▶ Drag and Drop: <https://h5p.org/drag-and-drop>
- ▶ Crosswords: <https://h5p.org/content-types/crossword>
- ▶ Drag the Words: <https://h5p.org/drag-the-words>
- ▶ Fill in the Blanks: <https://h5p.org/fill-in-the-blanks>
- ▶ Flashcards: <https://h5p.org/flashcards>
- ▶ Image Pair: <https://h5p.org/image-pairing>
- ▶ Image Choice: <https://h5p.org/content-types/image-choice>
- ▶ Mark the Words: <https://h5p.org/mark-the-words>
- ▶ Quiz: <https://h5p.org/question-set>
- ▶ Interactive Book: <https://h5p.org/content-types/interactive-book>