

EngAGe: An Engine for Assessment in Games

Tutorial teachers

EngAGe is a tool aimed at developers and teachers for the integration of assessment in educational games.

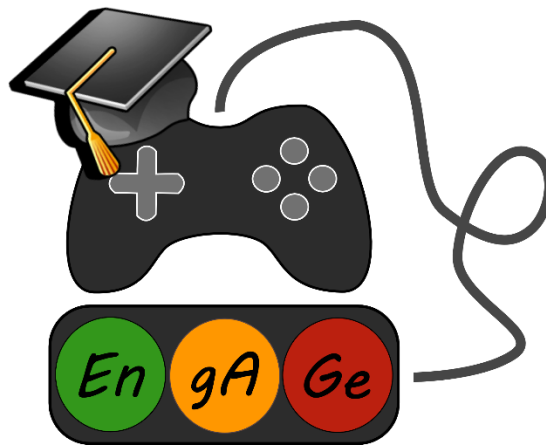
Developers create games using it and teachers can:

- Use the games with their students
- Modify the games using an online editor
- Visualise learning analytics (i.e. graphs showing information about how the players played)

This tutorial is aimed at teachers that are interested in the concept and would want to learn how to use the tool.

If you haven't already, you should complete the pre-questionnaire prior to doing the tutorial

The link to the pre-questionnaire: <http://goo.gl/forms/DHOzSkuJBS>



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1. Get to know EngAGe's interface

1.1. Login as a teacher

Once you have completed the pre-questionnaire (<http://goo.gl/forms/DHOzSkUJBS>), you can create yourself a teacher's account on EngAGe, please use the same email address you gave on the questionnaire.

Go to: <http://engage.yaellechaudy.com/login> , sign up and log in.

The screenshot shows the 'New Teacher' registration form on the EngAGe website. The form includes fields for Username, Email, Password, and Password confirmation. A dropdown menu for 'Idschool' is set to 'test'. The 'Create Teacher' button is at the bottom left. Three green callout boxes provide instructions: '1. Click here' points to the 'log in' button in the top right; '2. Fill the form then click here' points to the form fields; '3. Click here and log in.' points to the 'sign up as teacher' button in the top right.

1.2. Manage your students and classes

In the menu, go to 'Students > Manage students'. In this page you can create, modify and delete students.

Check that you already have 4 students and two classes, a geography one and a French one.

Create a student profile for yourself so you can play the games.

The first screenshot shows the 'Listing students' page with a table of existing students. A green callout box says 'Click here' pointing to the 'New Student' button at the bottom left.

Group	Username	Password	Date of birth	Gender	
French	Lisa	lisa	1990-01-24	f	Show Edit Destroy
	Cloé	cloe	1992-05-06	f	Show Edit Destroy
Geography	Noémie	noemie	2003-08-07	f	Show Edit Destroy
	Manon	manon	2001-09-12	f	Show Edit Destroy

The second screenshot shows the 'New student' form. It includes fields for Username, Password, Datebirth, Gender, and Group. A green callout box says 'Enter at least a username and password' pointing to the Username and Password fields. Another callout box says 'Select 'Teachers' class' pointing to the Group dropdown menu, which is currently set to 'Teacher'. A third callout box says 'Click here' pointing to the 'Create Student' button at the bottom left.

If you want to create new classes, go to 'Students > Manage groups'.

1.3. See your games

In the menu, go to '*Games > Manage games*'. You have been given access to two games:

- *EU mouse* is a geography game to learn EU countries
- *vocShoot* is a game to learn French words

1.4. See your students' access to the games

In the menu, go to '*Games > Manage students access*'. In this page you can see which of your students have access to which game.

Give access to the '*EU mouse*' game to your geography class and to '*vocShoot*' to your French class. To do so you can either click on the cells of the table modifying each student's access manually, or you can use the form on top of the table.

Game access to students

Click on any cell of the table to change the version to be played. You can also assign versions to all students or to a group in particular. Changes will not be effective until you click the "save changes" button.

Specify access for: Geography to play the game: EU mouse version: 0 - initial Update table

Group	Student	EU mouse	vocShoot
French	Cloé	no access	no access
	Lisa	no access	no access
Geography	Manon	no access	0 - initial
	Noémie	no access	no access
Teacher	my name	initial version	0 - initial

Save changes

After your changes, the table should look like that:

Group	Student	vocShoot	EU Mouse
French	Cloé	initial version	no access
	Lisa	initial version	no access
Geography	Manon	no access	initial version
	Noémie	no access	initial version
Teachers	me for testing	initial version	initial version

2. Play the game

In the menu, go to '*Games > Manage games*'.

Pick one of the two games and click the '*play*' button, it will open a new window and take you where the game is hosted. You will need to install the Unity Web player plugin if you don't have it already.

In this section, the tutorial will be divided in two columns. In you picked '*EU mouse*', look at the left column, if you picked '*vocShoot*' read the right one.

2.1. Login as a student

In the step 1.2, you have created a student account for yourself, log in to the game using the username and password you have created and click the start button.

Notice that before you are allowed to play, you will be asked a few questions.



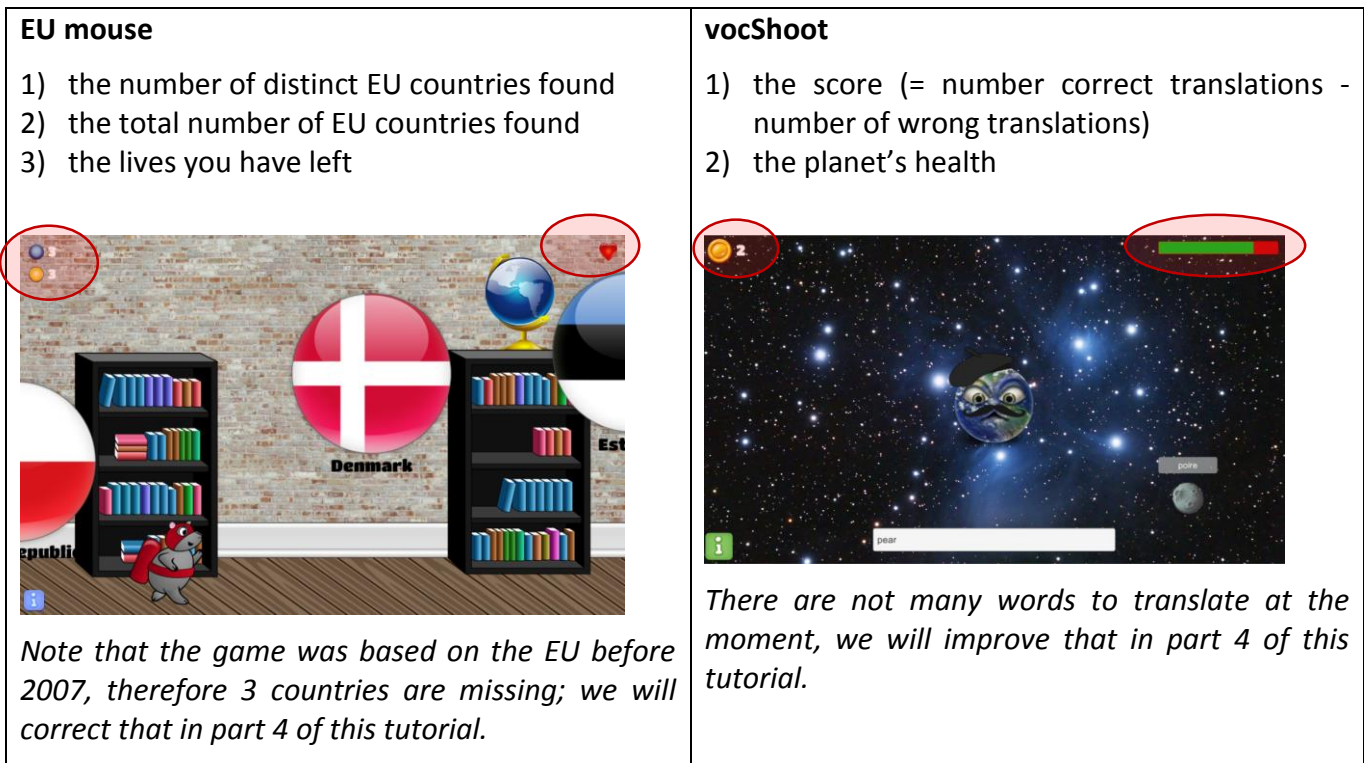
Note: If it doesn't work, go back to the steps 1.2 and 1.4 and make sure that you have the correct username and password and that you have given yourself access to the game you are trying to play.

2.2. During the gameplay

When you play, make sure you notice the following:

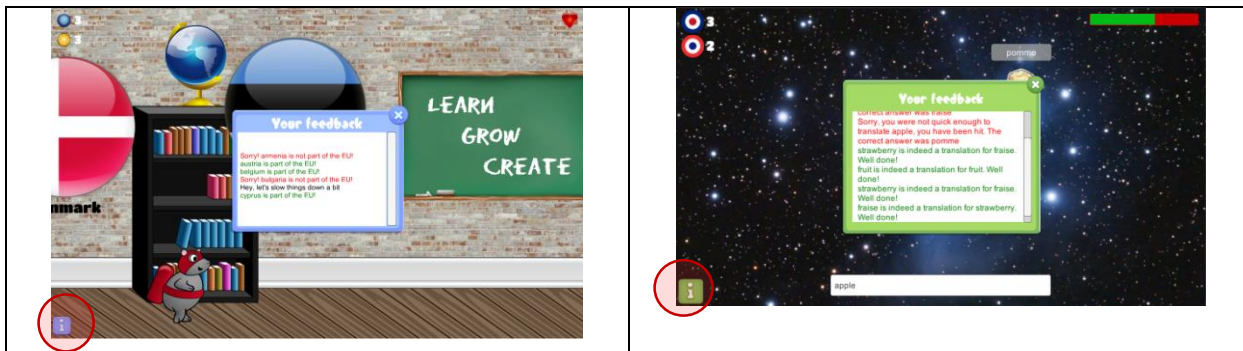
2.2.1. Scores

On the top of the screen, the game keeps track of your scores.



2.2.2. Feedback

On the bottom left corner, an information icon allows you to access the game's feedback



2.3. On the menu screen

On the menu screen, on the bottom left corner, you have access to further information about the game. You can see:

- 1) A description of the game



- 2) The badges you earned



- 3) The leaderboard of the game



3. Visualise gameplay data

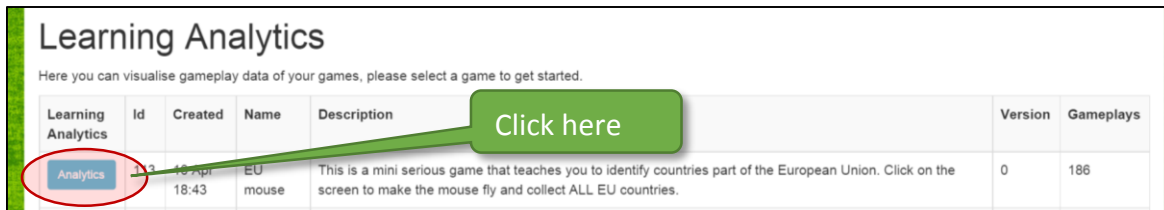
3.1. Login as a teacher

Go back to the interface and make sure you are logged in (using your teacher's credentials).

3.2. Learning analytics page

In the menu, go to 'Learning Analytics'.

Click on the 'Analytics' button of the game you just played.



Note: the more data there is (number of gameplays), the longer it will take to load the page, it's totally normal and it might take up to a few minutes.

On the newly open page, you can see lots of charts about who played the game and how. There are three different types of blocks:

- The **blue blocks** display basic information about who played, when and how many times.
- The **orange blocks** display information about scores and performances.
- The **green blocks** display more detailed information about the actions performed by the players and the feedback received in the game.

Note: If you want to learn more about the dashboard functionalities, click the 'Take a tour' button.

3.3. Draw conclusions about the game and your students

Take a closer look at some graphs in particular.

3.3.1. Learning curves between gameplays

In this graph you can see the evolution of the scores of your students from their first gameplay to their last. Notice how some students learn quickly and some others take more time. Make sure you click on the "By student" tab.



3.3.2. Most and least common actions

In this block, you can visualise most common mistakes or least common actions.

Select the most common new countries selected that resulted in a loss of life (- lives) to visualise the most common mistakes of your players.



Note that Bulgaria, Romania and Croatia are considered as mistakes, when they shouldn't.

Try selecting the least common new countries selected that resulted in a gain in score (+ eu_countries) to see which countries are least found by your players.



Select the most common planetHit that resulted in a loss of health (- health) to visualise the most common words that your players did not manage to translate on time. Or select the most common incorrect translations (- overall score) to see most common mistakes.



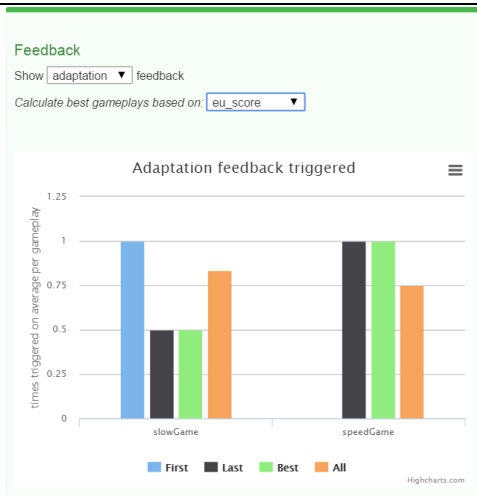
You can also select the most common translations that resulted in a gain of score to see what words your students know well.



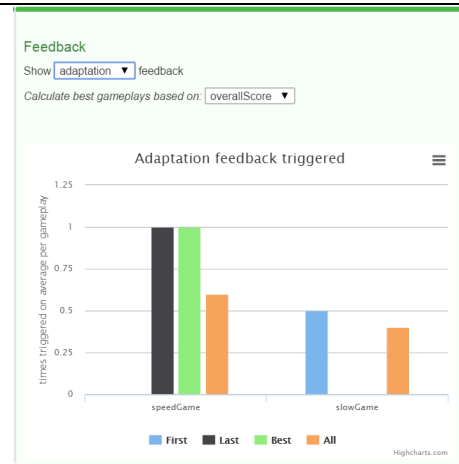
Note that, on average, your students correctly translated all the words, sometimes as often as 7 times per gameplay.

3.3.3. Feedback: Adaptation of the game

Both games include adaptation options, the game speeds up or slows down based on a student's performance. In the feedback block select "adaptation" feedback.



Note that half of your students still need the game to slow down in their last and best gameplays.

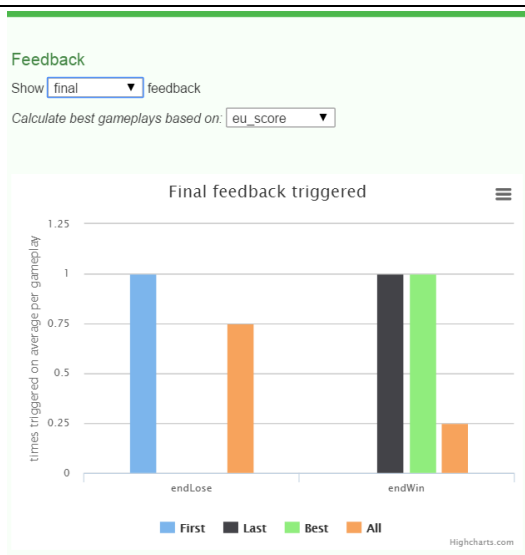


Note that in their last and best gameplays, your students never need the game to slow down, and it always speeds. The students might be too good for the game.

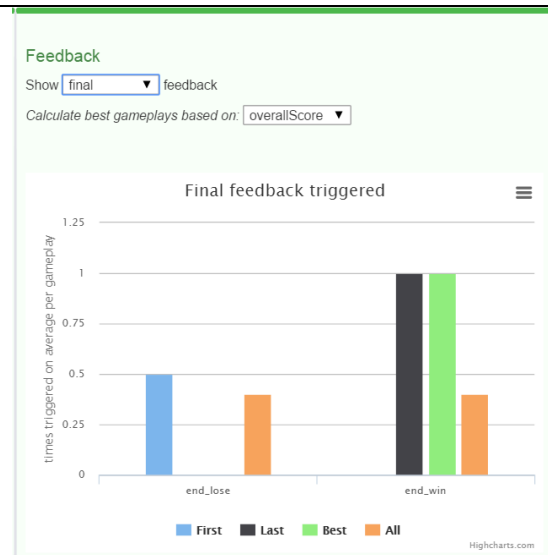
3.3.4. Feedback: End of game

In the same block, when you select "final" feedback, you will be able to see how many times the game was won and lost.

Note that if a player stops the game without finishing it, he/she will not trigger any winning or losing feedback, which can explain why the numbers do not always add up to 100%.



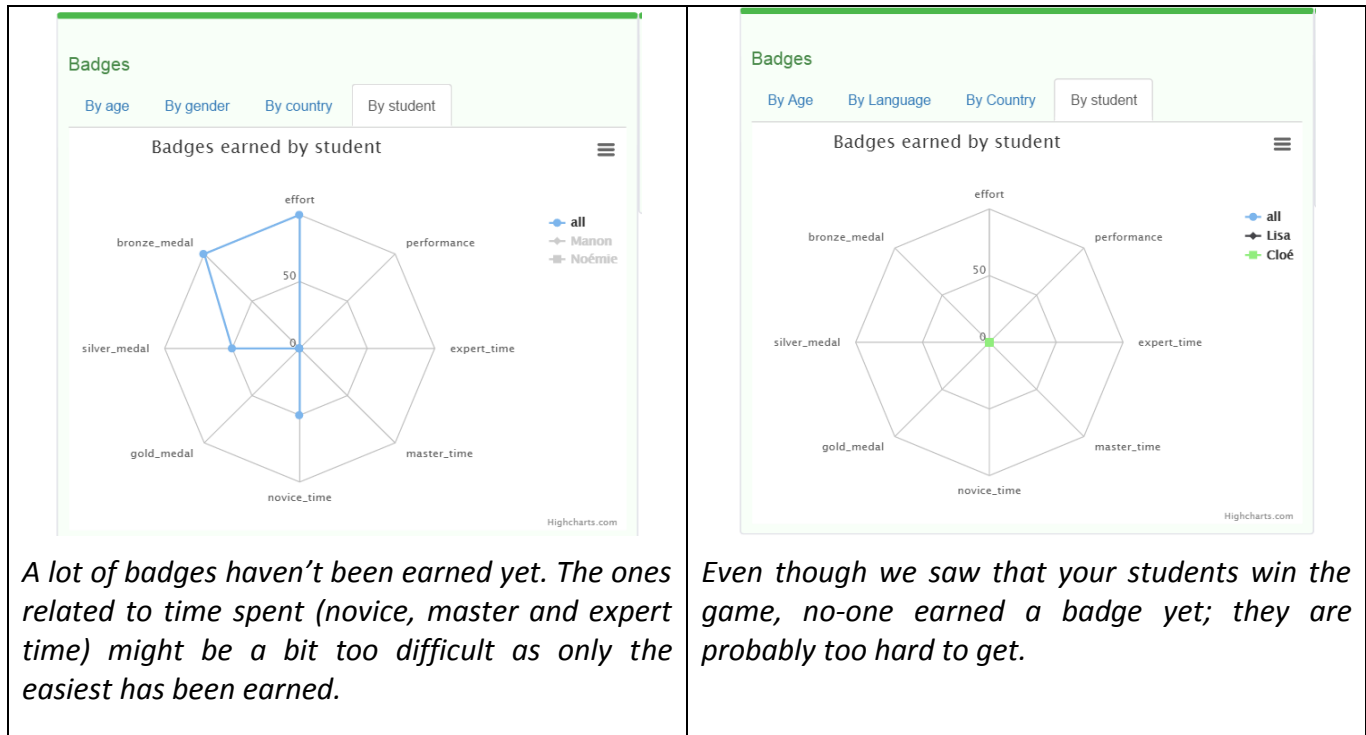
Your students lost their first gameplay but won their last and best; They seem to be learning.



Your students did not win their first gameplay but won their last and best; They seem to be learning.

3.3.5. Badges

The radar chart of the badges block shows which badges were earned by your students. Make sure you click on the “By student” tab.



3.3.6. Gameplay reports

If you click on the ‘Gameplay report’ tab of the page, you can create and download personal reports about your students’ gameplays. Edit the template on the right, visualise the report on the left and when you are ready, click the ‘save report’ button to save the player or class report to pdf.

Learning Analytics dashboard - EU Mouse
Version : 0 - Number of gameplays: 15 - Number of players: 3
Students who played: Yaelle Noémie Manon

Learning analytics **Gameplay reports**

Players' report
Here you can define a template

Template
☒ Badges
All the badges available in the game, the ones earned by the player and the player's progress towards them.

Preview
Yaelle
Yaelle
Noémie
Manon
All

1. Click here (pointing to the 'Gameplay reports' tab)

2. Define your template here (pointing to the 'Template' section)

3. Preview your report here (pointing to the 'Preview' section)

4. Select a student or 'All' and click here (pointing to the student selection dropdown and 'save report' button)

EU Mouse - Gameplay report
Yaelle
Generated on 29 May 2015 at 18:41

4. Modify the game

Now, we will modify the game you played. Here are a few suggestions for changes based on the charts presented earlier, but feel free to make your own decisions, you can modify anything that is displayed blue in the editor by clicking on it.

EU mouse	vocShoot
<ul style="list-style-type: none">✓ Make the game easier: give more lives✓ Make the EU score starts at 28 instead of 0✓ Add new EU countries (after 2007)✓ Change the end of the game✓ Change the conditions to earn the badges	<ul style="list-style-type: none">✓ Make the game harder: allow less mistakes✓ Add two scores for specific vocabulary✓ Add some words to translate✓ Change the end of the game✓ Change the conditions to earn the badges

In the website, go to 'Games>Manage games' click the 'View all versions' link associated to the game.

Manage your serious games

Here you can visualise all the games you have in our database, for each game, you can see the number of plays, the dates they were created, and you are able to delete them. You can also [click here](#) to register a new serious game in our database.

Id	Created	Name	Description	Gameplays	Learning Analytics	Versions	Play
131	19 May 15:21	vocShoot	Revise your french vocabulary. Save the french planet by translating the words on the asteroids.	7	Analytics	View all versions	
126	14 May 17:28	EU Mouse	This is a mini serious game that teaches you to identify countries part of the European Union. Click the screen to make the mouse fly and collect ALL the EU countries.	14	Analytics	View all versions	

In the page, click the 'create' button to create a new version from the initial version (i.e. version 0).

Original game

version: 0
Created on: 14 May 17:28
Developer: yaelle.borghini
Played: 14 times

Game name: EU Mouse
Game description: This is a mini serious game that teaches you to identify countries part of the European Union. Click the screen to make the mouse fly and collect ALL the EU countries.
AgeRange: 10 - 99
Language: EN
Country: UK

Last version

version: 0
Created on: 14 May 17:28
Version name: initial
Comments:
Played: 14 times

Game name: EU Mouse
Game description: This is a mini serious game that teaches you to identify countries part of the European Union. Click the screen to make the mouse fly and collect ALL the EU countries.
AgeRange: 10 - 99
Language: EN
Country: UK

All versions

• version 0: initial
Create new version from version 0 [Create](#)

4.1. Updating the game description and player characteristics

The first section of the editor describes the game. You can change its description if you want to, your students will then see your text when clicking on the info icon of the menu screen.

In the game, you were asked to provide some information (age, country...) and in the dashboard, you were able to group the data collected based on these characteristics. Update the 'Questions' section if you want to add /remove characteristics.

4.2. Adding a new score and modifying existing ones

The second section of the editor lists the scores of the game.

4.2.1. EU mouse

If you picked the 'vocShoot' game, skip this section.

It can be a bit frustrating not to know when the game will be won. The game tells the player how many unique EU countries he found, we will change it so that it displays how many countries he has yet to find.

Make the 'eu_countries' score start at 28 instead of 0. Click on the score to display more details. Click on the 'initial value' number and change it from '0' to '28'. Update the description for instance: 'EU countries left to find'. This score triggers an adaptation feedback that speeds the game. Update the feedback conditions for this score as follow:

eu_countries: EU countries left to find			
name	eu_countries		
description	EU countries left to find		
initial value	28		
feedback	<div>lower than <input checked="" type="checkbox"/> <input type="checkbox"/> 10 You're too good, let's make things more challenging triggered immediately</div> <div>lower than <input type="checkbox"/> <input checked="" type="checkbox"/></div> <div>greater than <input type="checkbox"/> <input type="checkbox"/></div>		

If you think that the game is too difficult, you can make it easier by giving more lives to the players. To do so, change the initial value of lives.

lives: number of lives the player has	
name	lives
description	number of lives the player has
initial value	5

4.2.2. vocShoot

If you picked the 'EU mouse' game, skip this section.

We will be adding new vocabulary soon, we want to add more specific score depending on the kind of vocabulary. Create two new scores by entering a name and a description for it and clicking on the 'create score' button. Name them 'voc_animals' and 'voc_fruits'. They should both start at 0.

voc_animals: Vocabulary of common animals		voc_fruits: Vocabulary of common fruits	
name	voc_animals	name	voc_fruits
description	Vocabulary of common animals	description	Vocabulary of common fruits
initial value	0	initial value	0

We noticed that this game can be too easy, you can make it harder by lowering the starting value of the 'health' score. For instance 80.

health: Health of the french planet	
name	health
description	Health of the french planet
initial value	80

4.3. Changing the rules of the game

The third section of the editor contains the logic of the assessment: what the player can do in the game and how it affects his scores.

4.3.1. EU mouse

If you picked the ‘vocShoot’ game, skip this section.

The game was created with a list of EU countries before 2007, it is missing Bulgaria, Romania and Croatia.

The game has two actions: selecting a country for the first time, and selecting it any time after that. Add the 3 countries to **both actions**. To do so, click on the action to open its details, start typing a country name in the relevant field, once you found it on the drop down, click on it or hit ‘enter’ to select it.

Remember to do it for both ‘When a player selects a country for the first time’ and ‘When a player selects a country again’.

Rules of the game

When a player selects a country again

1. If the user selects one of the following country

austria belgium cyprus czech_republic denmark estonia finland france germany
greece hungary ireland italy latvia lithuania luxembourg malta netherlands poland
portugal slovakia slovenia spain sweden united_kingdom bulgaria romania cro|

croatia

Because we changed the ‘eu_countries’ score, we should also change how it is updated. Instead of +1, -1 should be applied to it. You only need to do this in the action that deals with countries selected for the first time as we want unique EU countries.

When a player selects a country for the first time

1. If the user selects one of the following country

austria belgium cyprus czech_republic denmark estonia finland france germany
greece hungary ireland italy latvia lithuania luxembourg malta netherlands poland
portugal slovakia slovenia spain sweden united_kingdom croatia bulgaria romania

scores to be updated:

EU countries left to find	-1	✓	✗	remove
EU countries found by the player	1			remove

4.3.2. vocShoot

If you picked the 'EU mouse' game, skip this section.

The game has two actions: one when the planet is hit and one when a player translates a word. We will not need to change the first one, but we want to add a few words to translate. And because we want to separate the vocabulary of animals from the one of fruits, we will need to create a new condition block.

1. Click on the action 'When the player type a word (french or english) to fire at the meteorites' in the first condition block, you can see 5 fruits to translate, you can add some more if you want.
2. Add a new score update, in the score update form start typing 'voc_fruits' and select the relevant score. The default update adds 1 to the score (if the player correctly translated the words as specified in the previous table).

scores to be updated:	
number of correct translations	1

remove

voc_fruit

voc_fruits

3. Add a new condition block for the animals vocabulary.
 - a. Click on the 'add condition' button

add condition

Click here

2. Any other frenchWord, word

- b. Add various entries to the translation table. For example: poisson-fish, chat-cat, chien-dog and oiseau-bird. *Note that when you finish writing a word, you can hit enter to save it.*
- c. Add two score updates, 1 should be added to both 'overallScore' and 'voc_animals'. Start typing the scores name in the score update form, and select the relevant ones.
- d. Add a positive feedback to let the player know he did good. Click the 'add feedback' link, it will open a pop-up, select the 'correctTranslation' feedback.
- e. The resulting section should look like:

frenchWord	word	Action
poisson	fish	remove
chat	cat	remove
chien	dog	remove
oiseau	bird	remove

Add entry

2. If the user selects one of the following frenchWord, word

scores to be updated:	
number of correct translations	1
Vocabulary of common animals	1

remove

voc_animals

feedback to trigger	
positive	Yes, [frenchWord] is indeed French for [word].

3.b Animals vocabulary

3.c Score updates

3.d feedback

4.4. End of the game

The next section of the editor allows you to specify when the game ends.

4.4.1. EU mouse

If you picked the 'vocShoot' game, skip this section.

At the moment, the game is won when the 'eu_countries' score reaches 25 and it is lost when the player has no more lives.

Because we changed the 'eu_countries' score, we also need to change how it triggers the end of the game. Now, it counts the countries left to find so the game is won when there is no more country to find, when it reaches '0'. The editor does not allow testing for equalities, add a 'lower than 1' instead.

The game is won when/if:	
EU countries left to find	lower than 1
The game is lost when/if:	
Lives left	lower than 1

4.4.2. vocShoot

If you picked the 'EU mouse' game, skip this section.

At the moment the game is won if the player correctly translated more than 20 words and it is lost if the planet's health reaches 0.


To make the game longer, you can change the winning condition and have it wait for 30 correct translations instead.

The game is won when/if:	
overall score of the player	greater than 30
The game is lost when/if:	
Health of the french planet	lower than 1

4.5. Badges

As seen in LA, some badges might be too hard or too easy to earn. You can modify the conditions for earning a badge in the last section of the editor.

It can be motivating to earn a badge after playing for the first time, even if the game was lost. It will motivate your students to earn the rest of the badges. Update the 'effort' badge to give it to anyone that played once.

	effort:
	won when the number of games played is greater than 0
	message: You played the game at least once

4.6. Naming and describing your new version

That's it, your new version is ready for submission, name it something meaningful and explain in a few sentences the changes you made. For example:

- Name: version tutorial
- Description: version created after following EngAGe tutorial

Click on 'save'. Go to 'Games > Manage student access' and update the version of the game to be played by you. Don't forget to click 'Save changes'.

5. Play the new game and visualise gameplay data

5.1. Make sure you have access to your new version

Go to the game access page (step 1.4) and check that your name is associated to the new version

5.2. Play the game

Play the new version of the game and notice the changes.

5.3. Visualise the new analytics

Go to the learning analytics dashboard (step 3.2, make sure you select the correct version) to visualise the new game's data. This time you are the only one to have played so you will only see your own actions and performance.

6. The end

That's it congratulations! You reached the end of the tutorial. You are free to keep using the editor, the analytics dashboard and the games for as long as you want.

If playing the mini-games made you think of ideas of games that you would like to have, please send me an email and, if possible, I will try to create them. If I do, you will have access to them through EngAGe's interface.

On last thing, if you could take another 10 minutes to give me some feedback on the tool and the tutorial, I would really appreciate it.

Here is the link to the post questionnaire: <http://goo.gl/forms/11fUshGIIJ>