

Mathieu Loiseau, Coralie Payre-  
Ficout, Marie-Pierre Jouannaud,  
Adrea Soh, Anne Blavot



LIDILEM

 UNIVERSITÉ  
Grenoble  
Alpes

# LUCIOLE, an English listening comprehension learning game for 6-9 year olds



# Fluence

## LUCIOLE

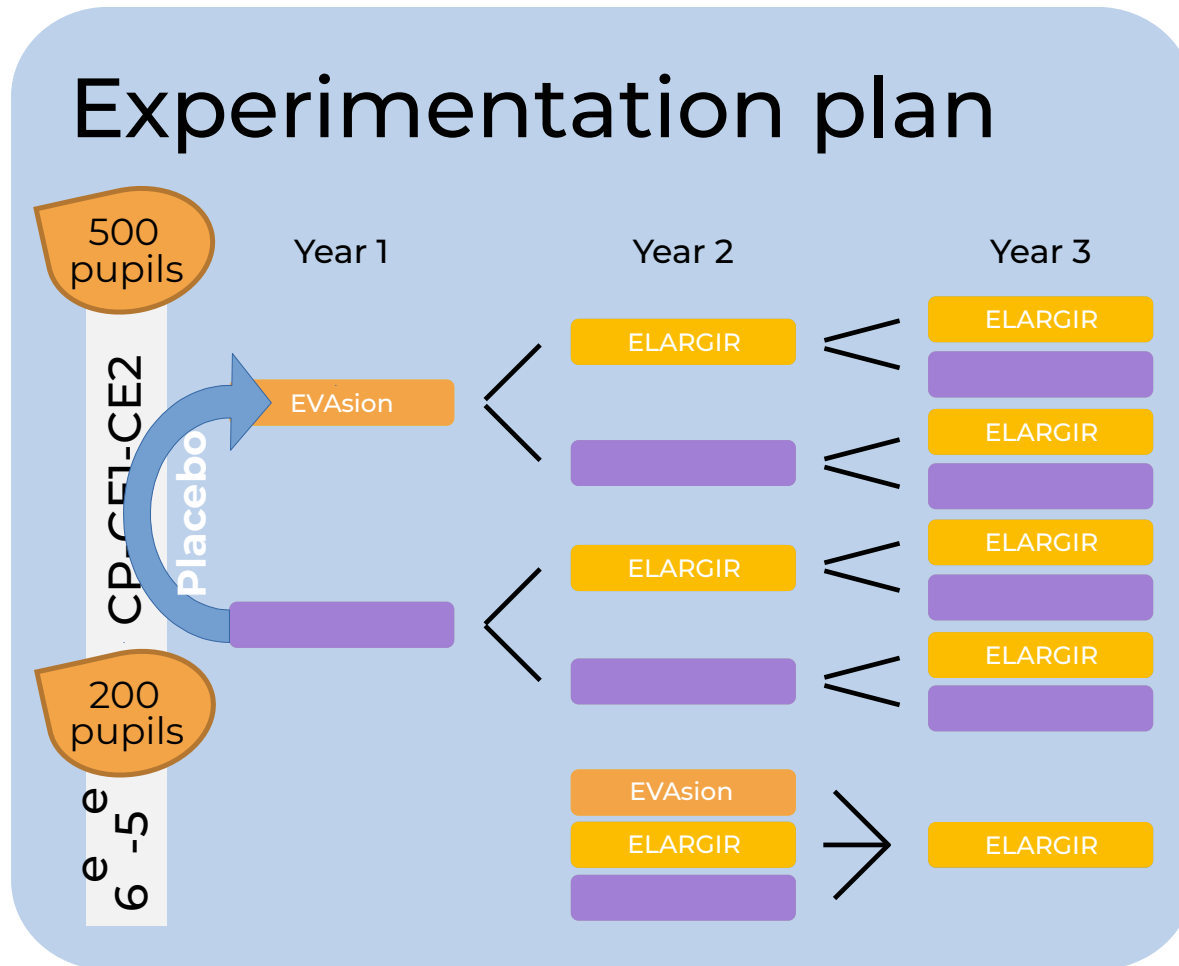
LUdique au service de la  
Compréhension Orale en  
Langue Etrangère



# The Fluence project

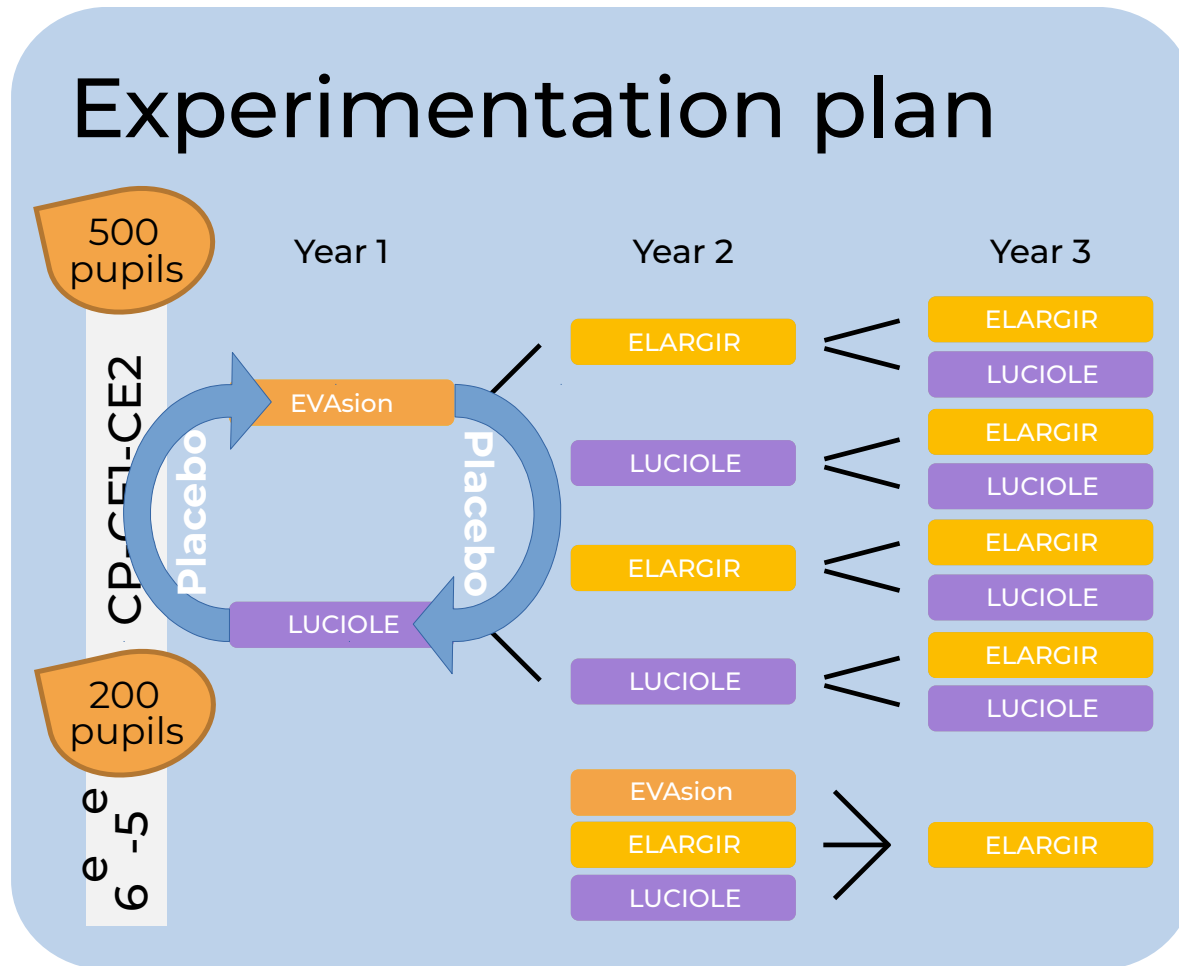
- Hypotheses (Meyer, Diard, & Valdois, 2017)
  - Reading fluency, long term predictor of academic success
  - Action video games improve reading underlying processes
    - Visuo-attentional span
    - Attentional shift
- Aim of the project
  - Building video games that would support these underlying processes
  - Testing their effect

# Experimentation plan



# Experimentation plan

52 schools  
730 pupils



# Research environment/ Constraints

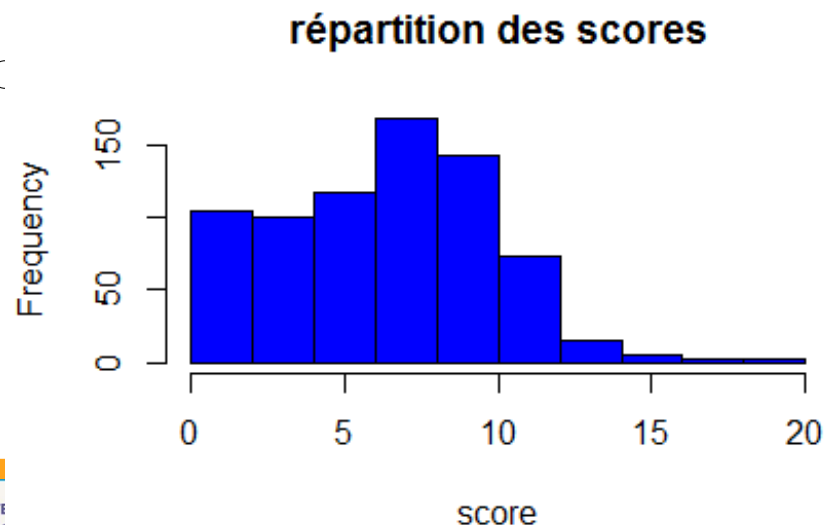
- 3 years × 10 weeks × 3 sessions × 20 min. play
- ipad app
- Little or no written text
- No “action video game” (not binary)  
(Green, Li, & Bavelier 2010, 203)
  - extraordinary speed,
  - high degree of perceptual, cognitive, and motor load in the service of an accurate motor plan,
  - unpredictability,
  - emphasis on peripheral processing.

# Research environment/ Constraints

- Very diverse contexts
  - Language awareness in kindergarten since 2015 (no official recommendations)
  - « Certains enseignants ont un niveau très faible et ne peuvent donc pas s'exprimer devant les élèves ».  
(Delasalle 2008, 375)
  - Out of 52 groups only 23 teacher responded
    - 21 like to teach English (what about 29 others?)
    - 66% → 1 English session per week (~30 min vs recommendations: 1h30/week)
- Most 6 year olds know very little English
- Oral comprehension (MEN, 2015)
- French learners display specific difficulties (Commission Européenne, 2012)
- Technical constraints — Speech recognition
  - Costly
  - Not reliable for
    - Young subjects
    - Foreign subjects

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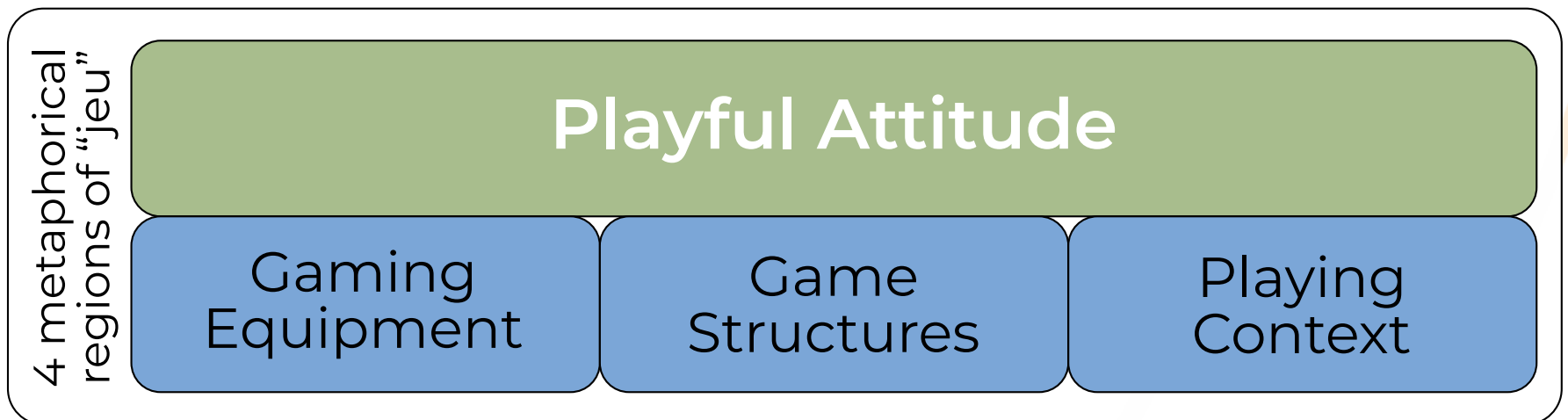


# Our approach

- Importance of input (Bybee, 2008)
  - Provide learners with frequent native input
  - Repetition of tokens and types
- Learning strategies (van Patten, 2002)
  - Phase 1: Presentation
    - Of what we will focus on (introduction of constructions)
  - Phase 2: Training
    - Constructions are repeated (error is possible)
  - Phase 3: Contextualization (final task)
    - Message decoding, keyword detection, etc.
    - Missions gradually more complex

# Game elements

- Objectives
  - “Make knowledge a tool rather than an end” (Holland, Jenkins, and Squire 2003)
  - Provoke a “Playful attitude”
    - « cette attitude ambivalente faite à la fois de distance et d’implication » (Silva, 2008, 18)
- Means: Metaphorical regions (Henriot, 1989; Silva, 2008)



# Playing context

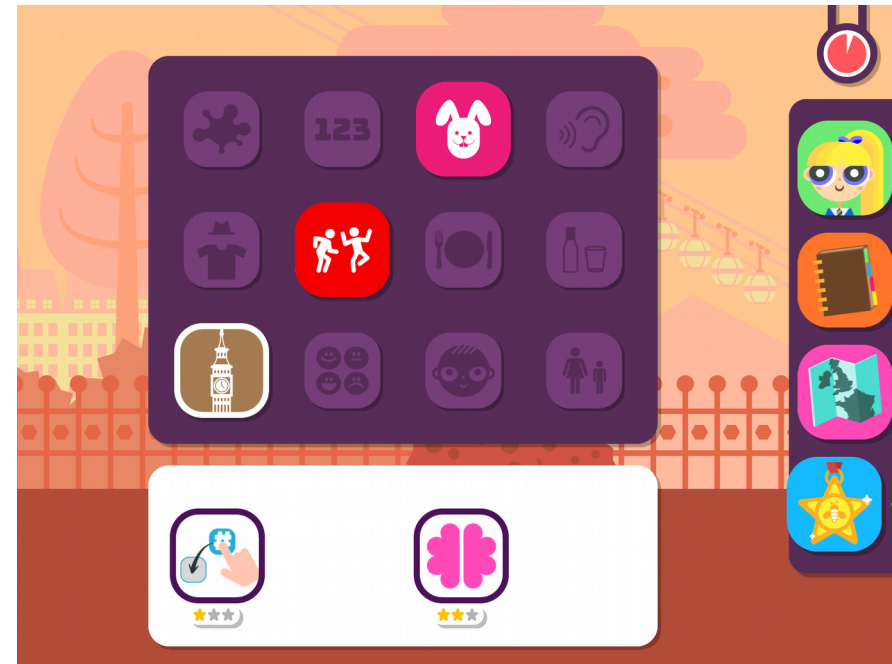
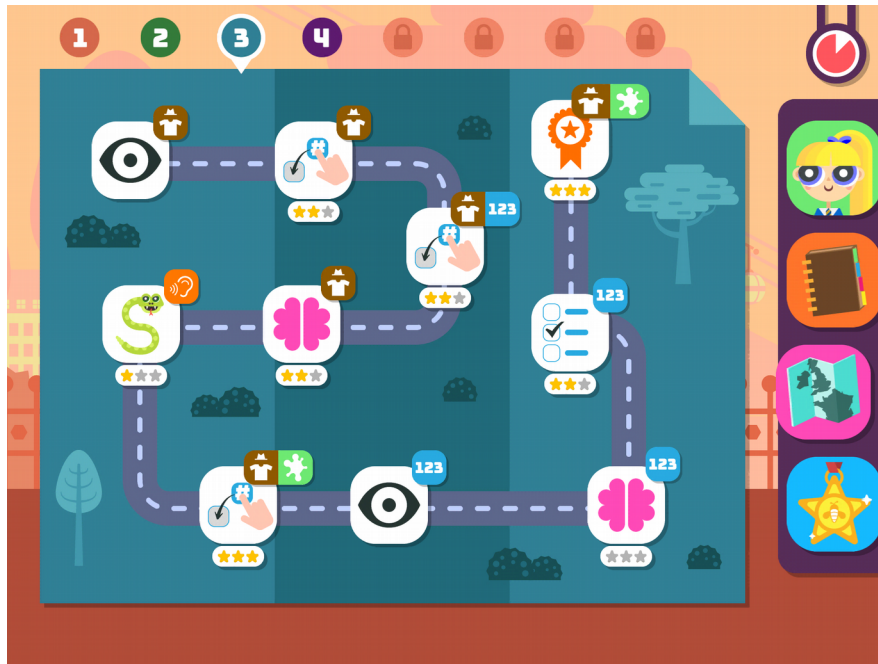
- Teachers free to
    - Integrate the game in their own work,
    - consider LUCIOLE as separate from their teaching.
- No previous knowledge necessary

# Gaming equipment — the “Spy” narrative

- The learner plays the part of a French kid who is recruited by a spy organization called “Firefly”
- Learner activity strongly integrated to the metaphor
  - cf. keyword detection/decoding
- Saving animals (Cassels et al. 2017)
- Missions to group content
- Narrative to introduce and justify activities

# Game structures

## Progression



# Game structures

## Notebook

- Always accessible
- Updated upon progression



# Game structures

## Visual research

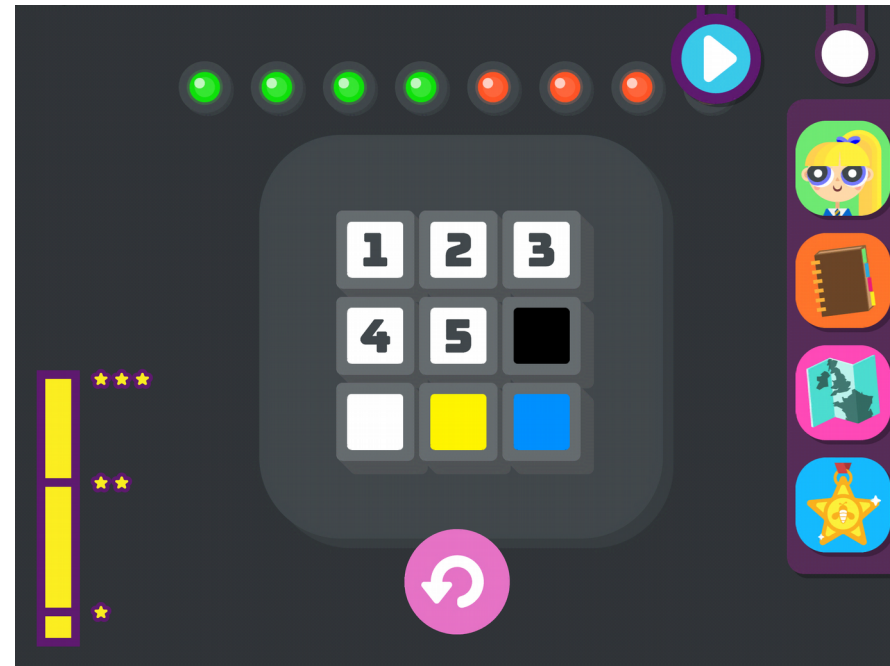
- For presentation phases mostly



# Game structures

## M/SCQ

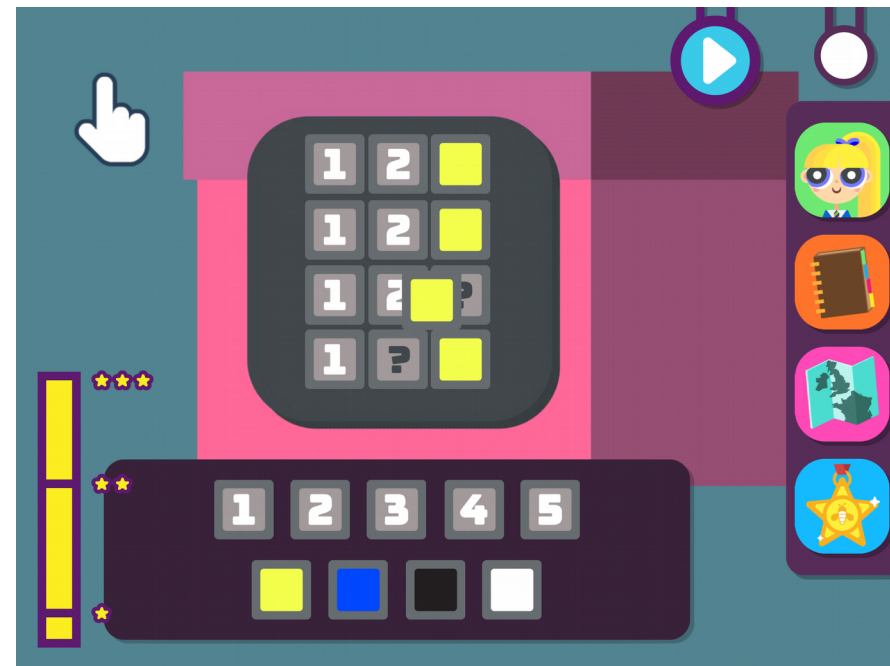
- Used both for training and contextualization





# Game structures

## Drag and Drop



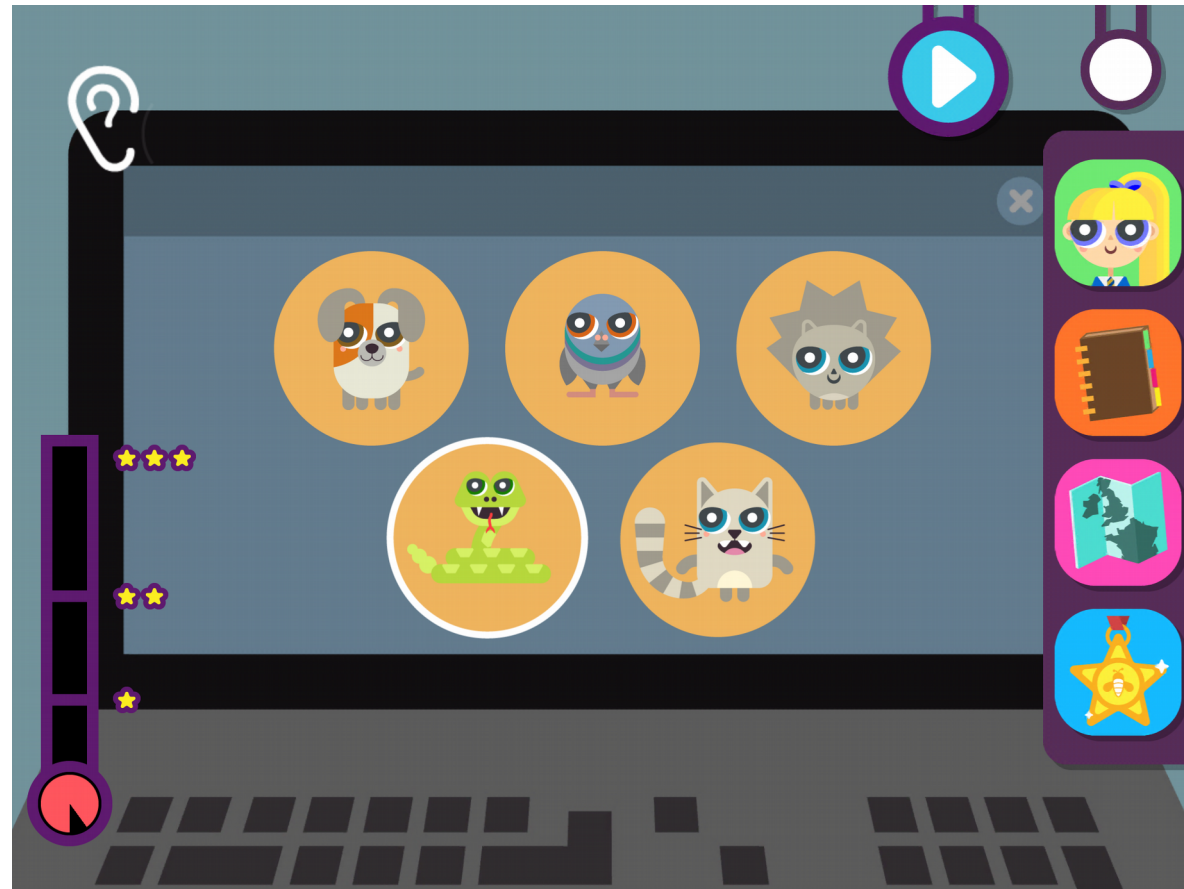
- Presentation
- Logical sequences
- More complex

# Game structures

## Simon



- Mainly for training
  - Multiple input
  - Language as means
  - Does it help retention?



# 1<sup>st</sup> year 1/2

- 47 activities created
  - Colors
  - Numbers
  - Animals
  - Action verbs
  - London Monuments
  - Phonology
    - /h/
    - /s/, /z/, /iz/
  - Syntax : S is C, SV,...
- 950+ sounds recorded
  - Transcripts
  - Types
- Implemented by [Œil pour œil](#)



# Perspectives

## Data Analysis

- Data available
  - Traces
    - Soundclip played (+ context)
    - Scores in the game
  - “Language biography”
  - Pre-tests (OC, OP)
  - Post-tests (OC, OP)
    - Currently being collected
- Global measurement of the effect of LUCIOLE
- Test influence of input over improvement?
- Over the 3 years of the project

# Perspectives

## 2<sup>nd</sup> year content

- QR code
  - Link physical space with game space
    - Prepositions
    - Collaborative task
- Virtual flashcards
  - Grammar with colors
  - Long term : physical flashcards
    - → teacher material



# Contributors

<http://wiki.lezinter.net/index.php/LUCIOLE:Crédits>



- Mathieu Loiseau
- Anne Blavot (Year 1)
- Marie-Pierre Jouannaud
- Coralie Payre-Ficout
- Adrea Soh (Year 1)
- Thomas Trial (Year 1)
- Lucie Le Roux (Year 1)
- Fatima Benmaïssa (Year 2)
- Johana Ladino (Year 2)
- Róisín Lee (Year 2)
- Fatma Miladi (Year 2)
- Sharmili Zafari (Year 2)

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