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

Year 1
- EVAsion
- Placebo
- 500 pupils
- CP-CE1-CE2
- 6 - 5

Year 2
- ELARGIR

Year 3
- ELARGIR

Experimentation plan

0

500 pupils

200 pupils
Experimentation plan

52 schools
730 pupils

500 pupils
500 pupils

200 pupils
200 pupils

Year 1
Year 2
Year 3

EVAsion
EVAsion

LUCIOLE
LUCIOLE

ELARGIR
ELARGIR

Placebo
Placebo

ELARGIR
ELARGIR

E-6
E-6

CP-CE1-CE2
CP-CE1-CE2

LUCIOLE
LUCIOLE

ELARGIR
ELARGIR

ELARGIR
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ELARGIR
ELARGIR

ELARGIR
ELARGIR
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
Research environment/Constraints

- Very diverse contexts
  - « Certains enseignants ont un niveau très faible et ne peuvent donc pas s'exprimer devant les élèves ».
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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
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

Session D \( n+1 \)

activity 1.1
activity 1.2

Mission 1
final task

activity 2.1
activity 2.2

Mission 2
game narrative

Session D \( n \)

Session D \( n+2 \)

activity n.1
activity n.2

Mission n
final task
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?
1st year ½

- 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

[Logo of 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

2nd 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

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Bibliography


