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EFFECT OF AN EFL LEARNING GAME ON PHONEMIC AWARENESS

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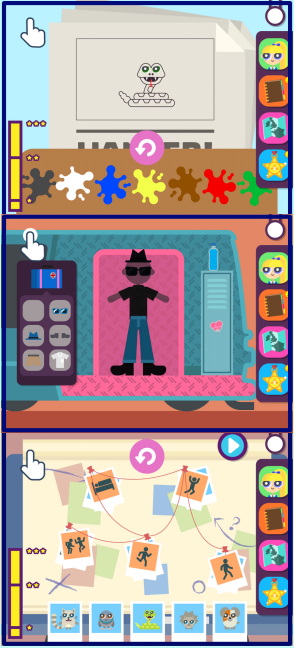
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LUCIOLE, AN EFL LEARNING GAME ON TABLET



- 6-9-year-olds
- listening comprehension
- English-speaking characters



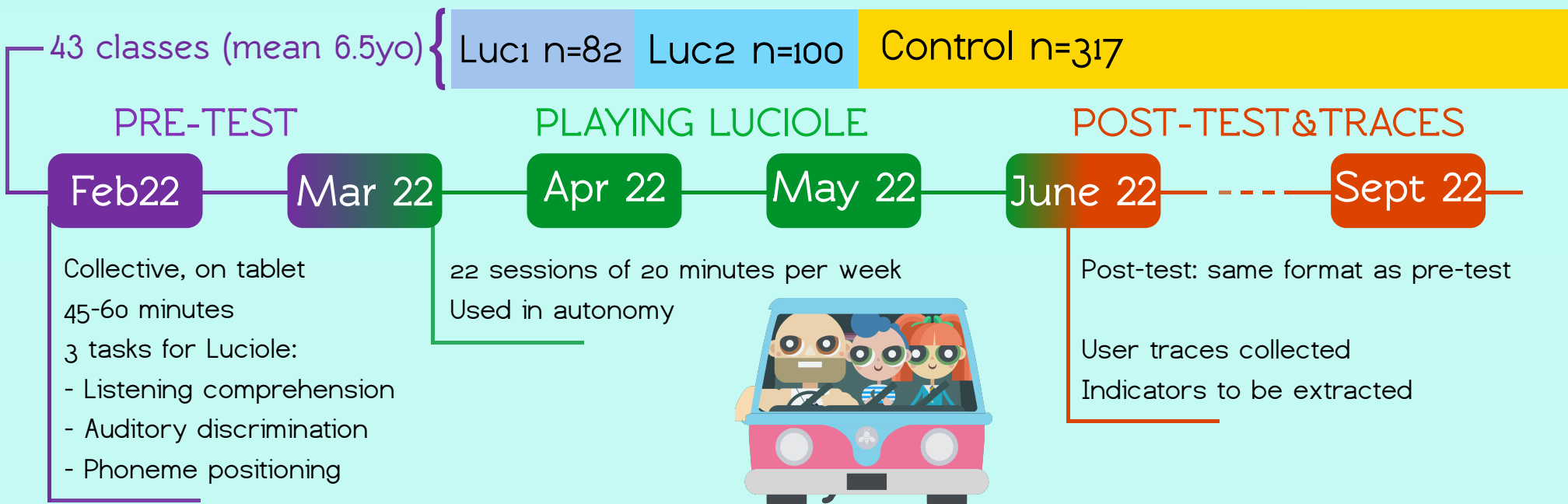
1ST EXPERIMENT

- development of listening comprehension
- effect on phonological awareness in French

NEW EXPERIMENT

- replication of previous results
- 2 versions of Luciole: original (Luc1) and without explicit phonological training (Luc2)

METHODOLOGY



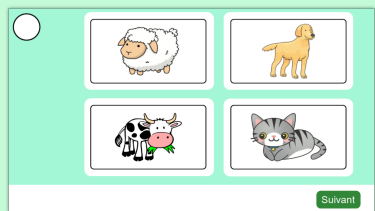
PHONOLOGICAL AWARENESS (PA)

- "one's ability to recognize, discriminate, and manipulate the sounds in one's language" [1]
- crucial role in reading acquisition [4]
- explicit training proved beneficial [3]
- general linguistic meta-skill [2]

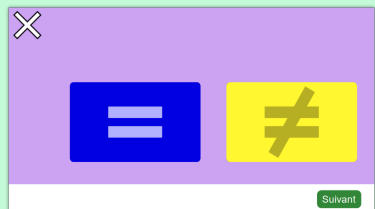


- [1] Anthony, J. L., & Francis, D. J. (2005). Development of Phonological Awareness. *Current Directions in Psychological Science*, 14(5), 255-259. <https://doi.org/10.1111/j.0963-7214.2005.00376.x>
- [2] Cummins, J. (1979). Linguistic Interdependence and the Educational Development of Bilingual Children. *Review of Educational Research*, 49(2), 222-251. <https://doi.org/10.3102/00346543049002222>
- [3] Ehri, L. C., Nunes, S. R., Willows, D. M., Schuster, B. V., Yaghoub-Zadeh, Z., & Shanahan, T. (2001). Phonemic Awareness Instruction Helps Children Learn to Read: Evidence from the National Reading Panel's Meta-Analysis. *Reading Research Quarterly*, 36(3), 250-287.
- [4] National Research Council. (2001). Preventing Reading Difficulties in Young Children. In C. E. Snow, M. S. Burns, & P. Griffin (Eds.), *Early Childhood Development and Learning: New Knowledge for Policy*. National Academies Press (US). <https://www.ncbi.nlm.nih.gov/books/NBK223299/>

TEST TASKS



LISTENING COMPREHENSION
Hear item and choose right picture
Raising complexity
18 to 25 items



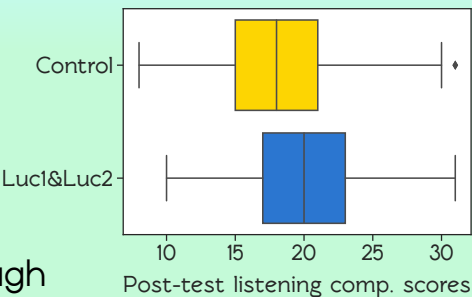
AUDITORY DISCRIMINATION (PA)
Hear two tokens, decide if same or different
Different speakers in post-test
6 to 8 items, French and English



PHONEME POSITIONING (PA)
Position given phoneme in nonword
8 to 10 items, French and English

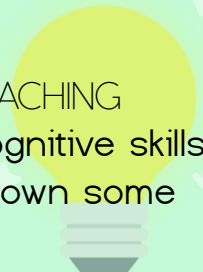
FINDINGS

- Luciole groups significantly better on listening comprehension task ($p < 0.05$)
- No clear result on PA assessment tasks
 - Time and means constraints (not enough items, collective test)
 - Need for standardized tests for PA
 - Control group skews results (encoding training)
 - New experiment to conduct with better control group



PERSPECTIVES

- FOR LUCIOLE
 - Increase synergy with curriculum
 - Interaction with oral production in class
- FOR LANGUAGE TEACHING
 - May affect meta-cognitive skills
 - Beneficial to take down some barriers



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Luciole is an EFL listening comprehension learning game for 6–9-year-olds. Learners play the role of a French kid named Sasha recruited by a spy agency to help save animals. Sasha interacts mainly with native English-speaking people from all around the British Isles who either speak English or French with a strong foreign accent. Luciole offers different activities. Some target thematic lexicon, others train specific phonological aspects of English difficult to apprehend for French learners. A first experiment showed that children who played Luciole developed their listening comprehension in English but also improved their phonological awareness (PA) in French. A new experiment has been designed to try to replicate the previous results and to explore their origin.

PA is defined as “one’s ability to recognize, discriminate, and manipulate the sounds in one’s language, regardless of the size of the word unit that is the focus” (Anthony & Francis, 2005). PA, and specifically phonemic awareness, plays a crucial role in reading acquisition (Snow et al., 2001), and the beneficial impact of explicit instruction of PA for typically and atypically developing children is well known (Ehri et al., 2001; Zoubrinetzky et al., 2019). Furthermore, various authors defend the hypothesis that PA is not linked to a specific language but rather a general linguistic meta-skill (Comeau et al., 1999; Cummins, 1979).

Explicit phonological activities represent only about 5% of Luciole’s activities, raising the question of their relation to PA improvement. Thus, in this new experiment, pupils from 14 classes were either confronted with the current version of Luciole (7 classes; n=89) or with a version without explicit phonological training (7 classes; n=102). Pupils from 29 other classes (n=355) using another application serve as an active control group. All 43 classes were tested in February 2022 on listening comprehension in English and PA in French and English, then they started to use the applications in class, for at least 22 sessions of 20 minutes spread from March to June 2022; post-tests are administered starting mid-June 2022. User traces are collected to refine our analyses.

Anthony, J. L., & Francis, D. J. (2005). Development of Phonological Awareness. *Current Directions in Psychological Science*, 14(5), 255-259. <https://doi.org/10.1111/j.0963-7214.2005.00376.x>

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