



HAL
open science

Digital as a teaching tool: Can the comprehension and fluency of reading be increased by the simplification and the nature of texts for young students?

Ludivine Javourey-Drevet, Stéphane Dufau, Núria Gala, Jacques Ginestié,
Johannes C Ziegler

► To cite this version:

Ludivine Javourey-Drevet, Stéphane Dufau, Núria Gala, Jacques Ginestié, Johannes C Ziegler. Digital as a teaching tool: Can the comprehension and fluency of reading be increased by the simplification and the nature of texts for young students?. Workshop Brain and Language Institute et Institute for Language, Communication and the Brain, Feb 2018, MARSEILLE, France. 2018. hal-01890525

HAL Id: hal-01890525

<https://hal.science/hal-01890525>

Submitted on 8 Oct 2018

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Digital as a teaching tool: Can the comprehension and fluency of reading be increased by the simplification and the nature of texts for young students?

Ludivine Javourey-Drevet ^{1,2}, Stéphane Dufau ², Núria Gala ³, Jacques Ginestié ¹, Johannes Ziegler ²

¹ Laboratoire Apprentissage Didactique Evaluation Formation EA 4671

² Laboratoire Psychologie Cognitive - UMR 7290

³ Laboratoire Parole et Langage – UMR 7309

Introduction

Written comprehension is fundamental for academic, professional, and personal success. According to the "simple" model of reading proposed by Hoover and Gough (1990), written comprehension is the product of two independent skills: oral comprehension (vocabulary and retrieval of semantic information) and decoding (identification of written words).

This study aims to investigate whether text simplification improves the fluency and reading comprehension of students aged from 7 to 9 years old. Simplification was carried out at three levels (lexical, syntactic and discursive) for literary and scientific texts.

Objectives

- What are the factors (cognitive, linguistic) that determine text comprehension and fluency?
- Does reading comprehension of texts vary according to the nature of the text (scientific and literary)?
- Can text simplification increase fluency and comprehension, and if so for whom?

Methodology

Reading comprehension and fluence

Cognitive tests
(in individual)

Reading on iBook
(autonomy)

EVALUATION PROFILES

- READING SPEED
- VOCABULARY (lexicon)
- PHONOLOGY
- WORKING MEMORY
- MORPHOLOGICAL AWARENESS
- ORTHOGRAPHIC SKILLS
- ...

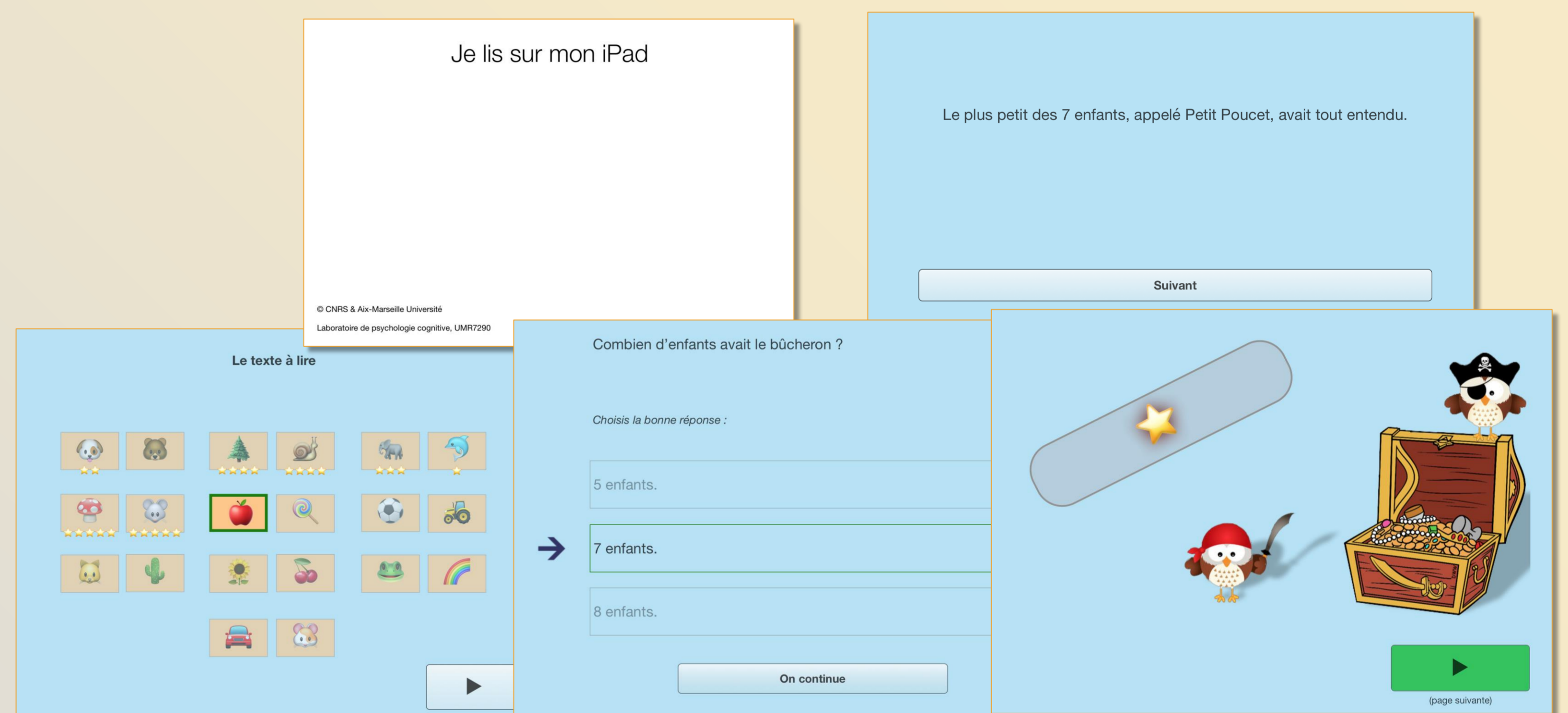
NATURE OF TEXTS

- SCIENTIFIC TEXTS
- LITERARY TEXTS

IMPACT OF SIMPLIFICATION

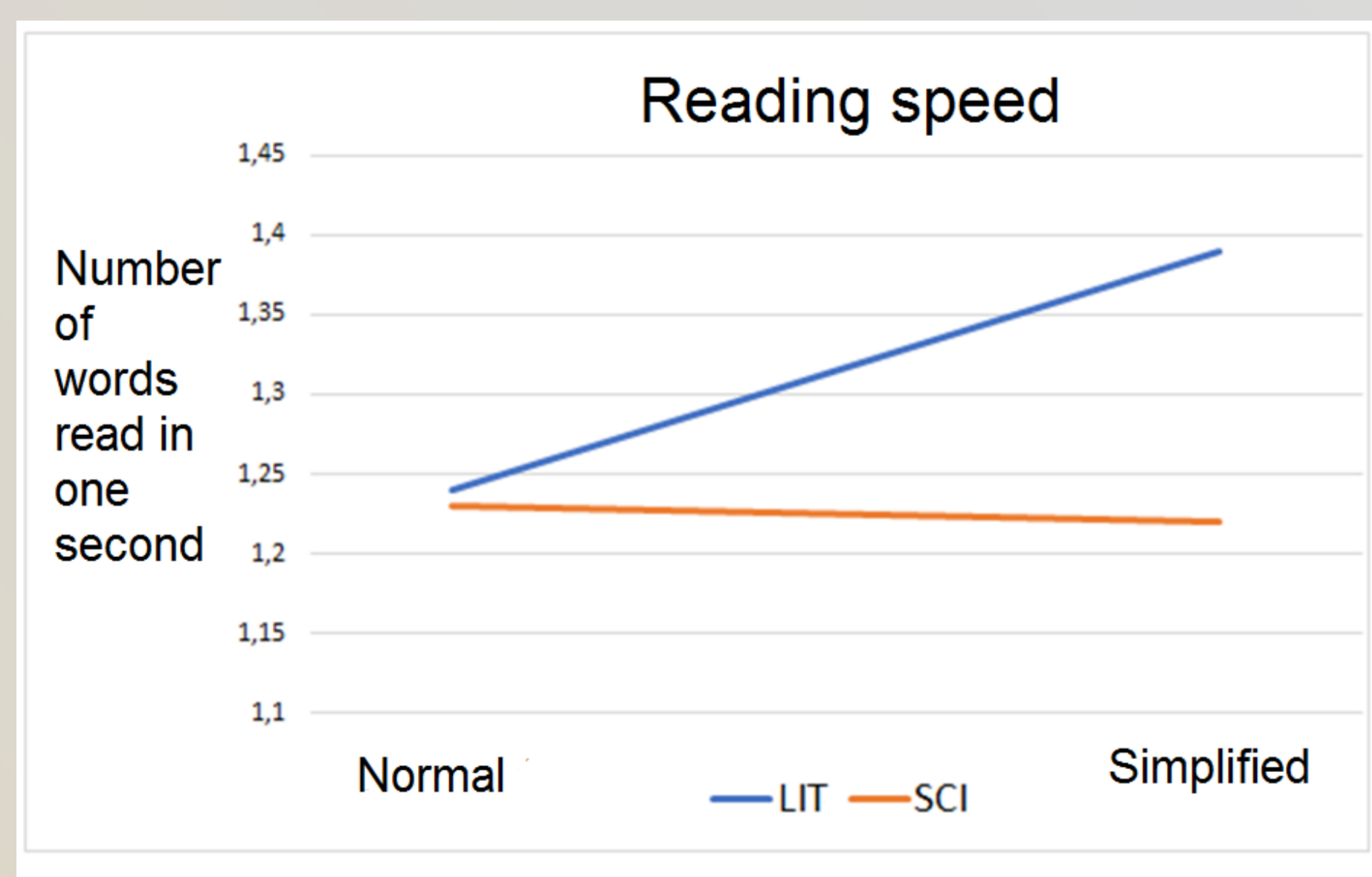
- ORIGINAL TEXTS
- SIMPLIFIED TEXTS

The first experimental phase allowed to pass cognitive, linguistic and socio-cultural tests in individual. For the second phase, a computerized tool was developed on iPad to measure and transmit "online" reading speed and comprehension scores. A cohort of 170 students in 9 classes followed the experiment. The students read independently 20 texts including 10 scientific and 10 literaries, in the original or simplified version. Each text was followed by 5 comprehension questions and 3 suggested answers.

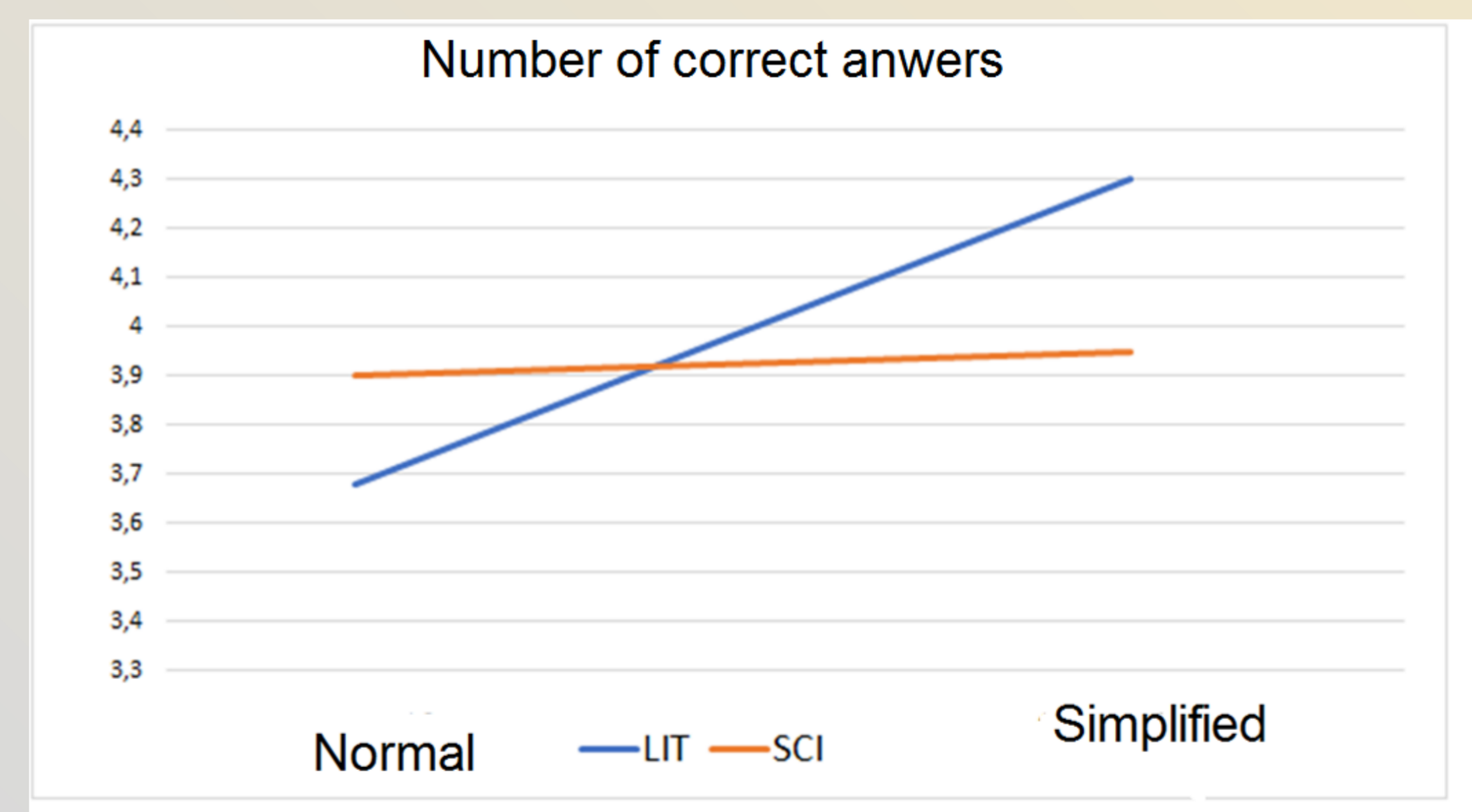


Preliminary results

READING FLUENCY ACCORDING TO THE NATURE OF TEXTS AND SIMPLIFICATION



NUMBER OF CORRECT RESPONSES ACCORDING TO NATURE OF TEXTS AND SIMPLIFICATION



Conclusion

Early results suggest that text simplification improves the speed and the comprehension of literary texts but has no effect on the reading of scientific texts. The comprehension of simplified literary texts was superior to the comprehension of scientific texts in original and simplified versions. The same group of students will be followed for 3 years to determine the factors which influence the texts comprehension over time. The integration of normative data in the computer tool allows the obtention of relatively precise and dynamic measures of the students' level of comprehension.

Hoover, W. A., & Gough, P. B. (1990). The simple view of reading. *Reading and writing*, 2(2), 127-160.