A predictive battery of literacy acquisition for children in third year kindergarten

Sophie Gillet[1], Florence Binamé [12 2], Julie Martinetti[1] , & Martine Poncelet[1]

[1]Department of Psychology: Cognition and Behaviour, University of Liège, Liège, Belgium
[2]Fonds National de la Recherche Scientifique, Belgium

INTRODUCTION

Phonological abilities like phonological awareness, verbal short-term memory and rapid automatized naming have been shown to be reliable predictors of early literacy acquisition abilities (Landerl & al., 2013). Letter knowledge (Foulin, 2005) and short-term memory for order information (Martinez Perez & al., 2012) have also been associated with reading acquisition. In order to identify children at risk for reading acquisition difficulties at a very early stage, we designed a battery of tests ("Batterie d'évaluation collective des Prérequis spécifiques à l'apprentissage du Langage Ecrit en 3ème maternelle", BPLE) which permits a collective assessment of the different predictors identified to support literacy acquisition.

THIS STUDY

The aim of the present longitudinal study was to validate this battery by assessing, for children in 3rd year kindergarten, its ability to predict reading and writing abilities one year later (first year of elementary school).

METHODS

Participants

88 typically developing children tested at the age of 5 (third kindergarten) and one year later at the age of 6 (first grade).

Tasks of the BPLE (3rd year kindergarten)

Collective assessment

Example :

- **Phonological awareness**
  - Rhyme identification (5 items, score/25)

« Circle the words that rhyme with the sound *–eau* »

  - Syllable identification (5 series, score/25)

« Circle the words in which you hear the sound *–lé* »

  - Phoneme identification (5 series, score/25)

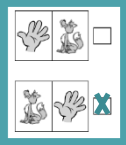
« Circle the words that begin with the sound *-m* »

- **Letter knowledge** (8 letters, score/8)

« Circle the letter S »

- **Serial order STM** (3 to 6 items, score/8)

« CHIEN - MAIN »



- **Item STM** (2 to 5 items to recall), score/14)

« FLEUR - BOUCHE »

Individual assessment

- **Rapid automatized naming** (sec)

Procedure

- **Group testing :** between 7 and 10 participants
- **Material :** response booklet for each child, pencil
- **Duration :** approximately one hour

Literacy tasks (1st grade)

- **Non-word dictation**
  - 16 monosyllabic NW (CV, VC, CCV, CVC)
  - 20 disyllabic NW (V-CV, VC-CV, CV-CV, CCV-CV, CVC-CV)
- **Non-word reading** (same non-words as for the dictation, score /36)

RESULTS

Correlation analysis

All the predictors are significantly associated with the literacy abilities assessed one year later (after controlling age and sociocultural level, see table 1)

Table 1. **Correlation analysis between the predictors at Age 5 and literacy tasks at Age 6 .**

	NW dictation r	NW reading r
1.Age (en mois)	ns	ns
2.Sociocultural level	ns	ns
Phonological awareness		
3. Rime	.56***	.59***
4. Syllable	.55***	.45***
5. Phoneme	.49***	.48***
4. **Letter knowledge**	.43***	.35**
5. **Serial order STM** (score)	.36***	.35**
6. **Item STM** (score)	.44***	.33**
7. **RAN** (sec)	-.56***	-.57***

Hierarchical regression analysis

- ***phonological awareness*** *(ΔR² .15***)*
- ***item STM*** *(ΔR² .03*)*
- ***rapid automatized naming*** *(ΔR² .06***)*

Independent predictors *of the score on the NW dictation*

- ***phonological awareness*** *(ΔR² .13***)*
- **rapid automatized naming** *(ΔR² .10***)*

Independent predictors *of the score on the NW reading*

** p< .05, **p<.01, ***p<.001*

DISCUSSION

These results show that this collective battery is a valid tool for predicting, in 3rd year kindergarten children, literacy abilities one year later.

The BPLE appears to be a promising tool for detecting, at an early stage, children at risk for later literacy acquisition difficulties.

Address for correspondence: Sophie Gillet, Department of Psychology : Cognition and Behaviour, University of Liege, Boulevard du Rectorat, B33, 4000 Liège BELGIUM. E-mail: s.gillet@ulg.ac.be