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Embodied pedagogical practice in learning new words in French Kindergarten children

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1 INTRODUCTION

- **Learning to read : Vocabulary** is a **predictor** of **reading skills** (Muter et al, 2004 ; Ouelette, 2006)
- **Framework : Embodied Cognition** (Barsalou, 2008) and more particularly « **Embodied Pedagogy** » (Macedonia, 2019)
- **Co-speech iconic gestures** (McNeil, 1992) : **Co-speech gesture** illustrating some **semantic properties** of the **word referent** → **An efficient tool to support L2 vocabulary learning in both adults and children** (Kelly et al., (2009) ; Quinn-Allen (1995) ; Tellier (2008) ; Sweller et al., (2020) among others)
- **Current study** : Focus on **L1 vocabulary acquisition** in French Kindergarten children and ask whether

- 1) **Reproducing iconic gestures** would be **more effective** in **learning vocabulary** than viewing pictures
- 2) The **effect of the learning method** would **depend on vocabulary type** (action verb or noun)

2 METHOD

- **30 kindergarten** (17 F & 13 M) aged to 5 ½ to 6 ½ years (5,9 ± 4 months)
- **20 new words to learn** : **10 action verbs** (“to crumple”) & **10 nouns** (“pill”)
- **2 experimental conditions** : a **traditional teaching** practice based on **pictures** and **seeing & reproducing iconic gestures**
- **Learning vocabulary** : **groups of 3 or 4 children trough videos; 2 session / Method**

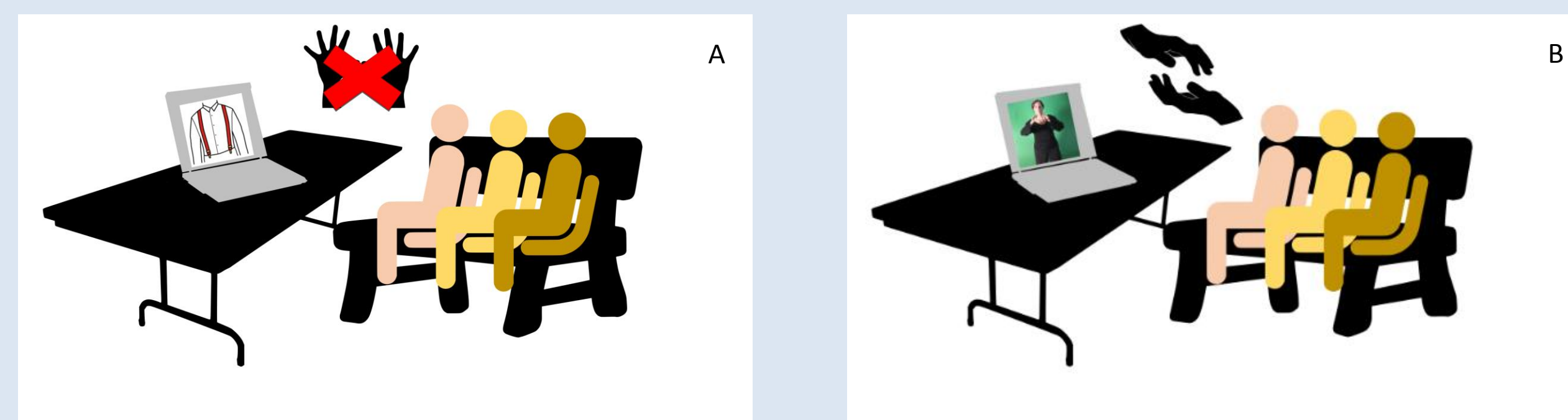


Fig 1. Examples of learning session for each experimental conditions for : (A) Gestures enrichment condition for « straps » ; (B) Pictures enrichment conditions for « to knead »

- **Short Terme evaluation** : free recall task, recognition task, denomination task and definition task

3 RESULTS

FREE RECALL TASK

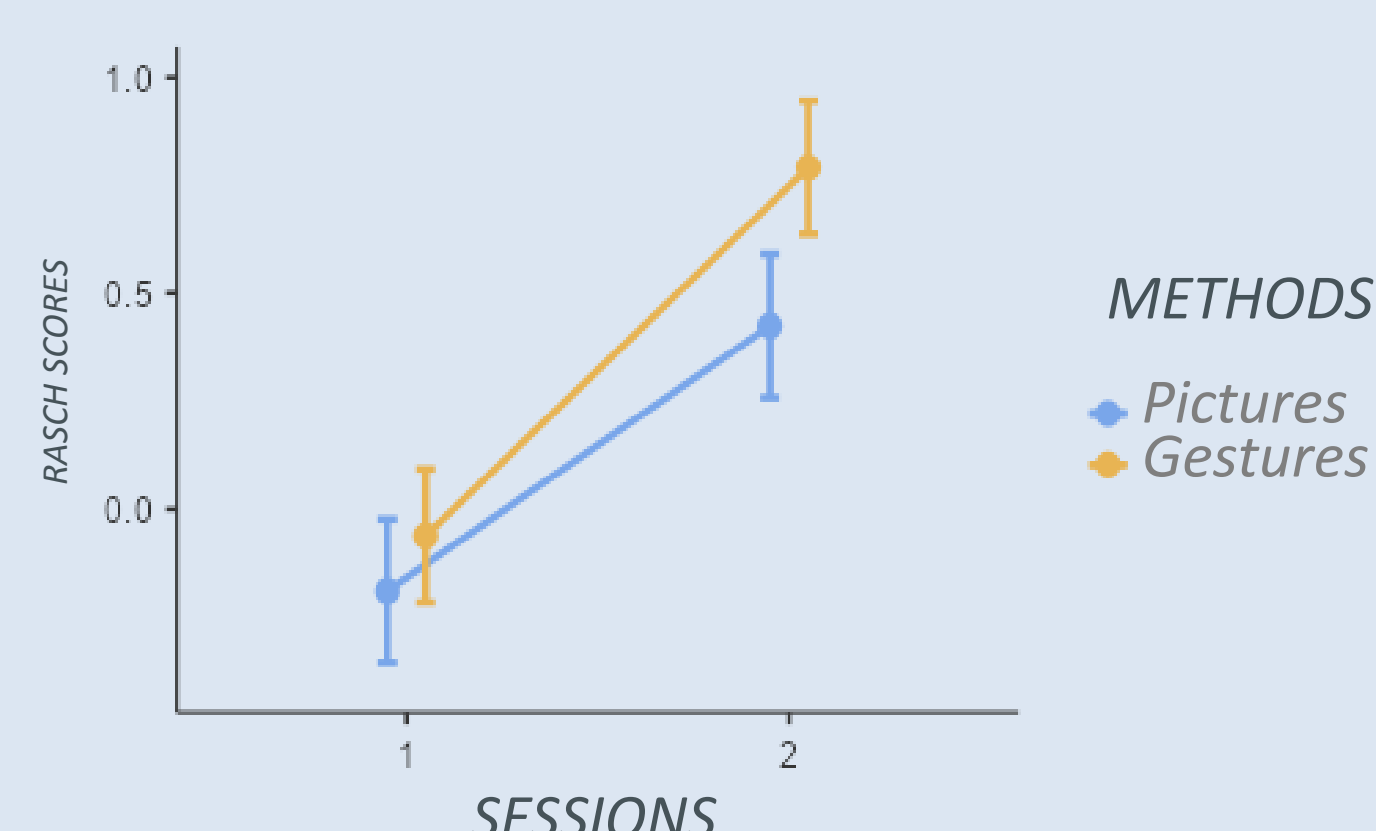


Fig 2. Mean scores of Rasch Score for Recall task as a function of sessions and enrichment condition (error bars represent SE).

More words recalled in gesture enrichment condition than in picture enrichment condition (Fig. 2)

More recognized words in gesture enrichment condition than in picture enrichment condition in S2 (Fig.3)

RECOGNITION TASK

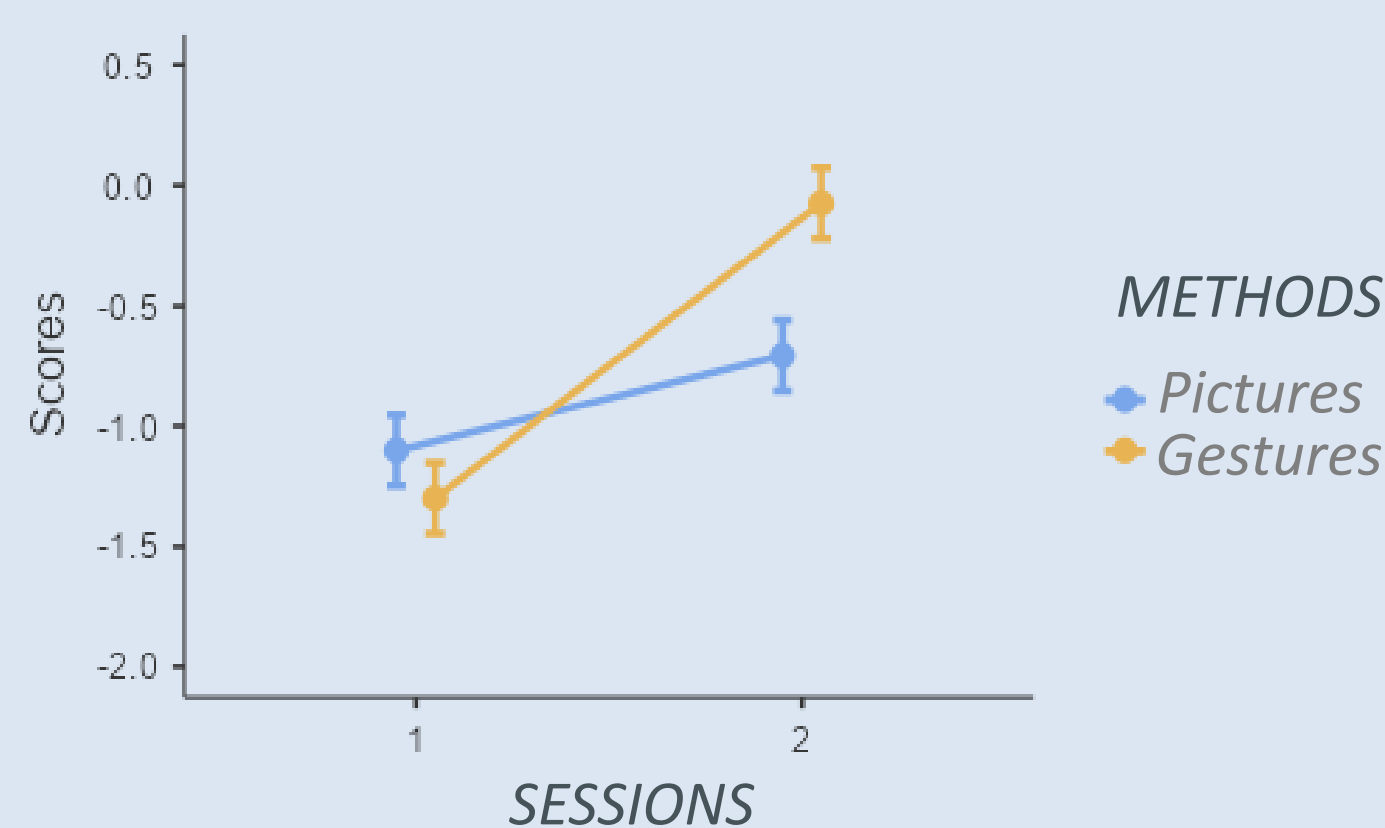


Fig 3. Mean scores of Rasch Score for Recognition task as a function of sessions and enrichment condition (error bars represent SE).

DEFINITION TASK

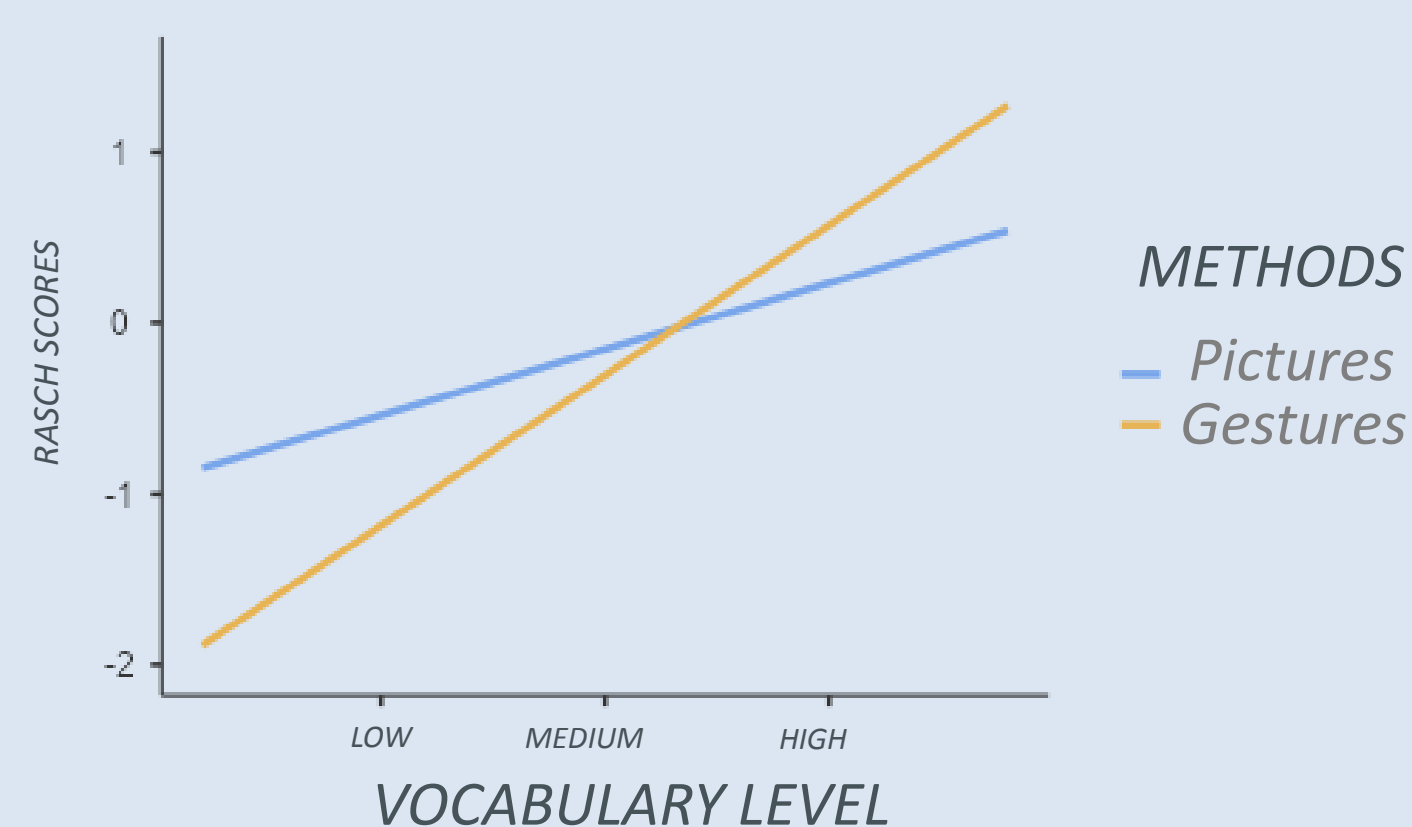


Fig 4. Mean scores of Rasch Score for definition task as a function of vocabulary level and enrichment condition.

Benefit of the method depended on the initial vocabulary level of the children (Fig. 4)

4 DISCUSSION

- **Initial hypothesis partially confirmed** : **benefit of gesture enrichment condition for recall and recognition task.**
- Need to **take into account** the **initial level of vocabulary** of the learners (definition task).
- Interestingly, **no difference** in the **effectiveness of enrichment conditions** depending on **word types.**
- Next study :
 - **Long-term measurement (J+7 & J21)**
 - **A supplementary method : Seeing gestures only** → **to control the effects of perceptual simulation and ensure that the benefits of visualization & gesture reproduction are due to the learners' physical engagement**

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