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Evidence-based practices to stimulate emergent literacy skills in kindergarten in France: A large-scale study

Jean Ecalle [a, f, *], Hélène Labat [a, b, f], Marion Le Cam [c], Thierry Rocher [c], Laurent Cros [d], Annie Magnan [a, e, f]

[a] Laboratoire EMC Etude des Mécanismes Cognitifs (EA 3082), Université Lyon2, France
[b] Laboratoire Paragraphe, Equipe Compréhension, Raisonnement et Acquisition des Connaissances (EA 349), Université Paris8, France
[c] DEPP Direction de l'Evaluation Prospective et de la Performance, Ministère de l'Education Nationale, France
[d] Association Agir pour l'Ecole, Paris, France
[e] IUF Institut Universitaire de France, France
[f] LabEx Cortex Lyon ANR-11-LABX-0042, France

HIGHLIGHTS

- Evidence-based (EB) literacy practices were proposed in a randomized controlled trial.
- Analyses involving propensity scores were conducted to examine their impact.
- These revealed a global effect on trained literacy skills in experimental group.
- The impact was more robust in the children with the lowest scores.
- The links between EB research, EB practices and EB policy are presented.

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ABSTRACT

In a randomized controlled trial with 3569 kindergarten children, evidence-based literacy practices (EBLP) were proposed by teachers to an experimental group (EG). A control group did not receive any specific interventions during the same period. The EBLP related to the alphabetic code, phonological awareness and oral comprehension. Analyses based on propensity scores showed significant gains in the targeted domains and in pseudoword reading in EG after comparison between the two groups. The gains were higher for children who had the lowest scores. However, no effect was observed in word reading and vocabulary. EBLP could be a valuable pedagogical tool.

1. Introduction

As in other countries, and in particular English-speaking parts of the world where government funds are used to enhance school readiness (Griffiths & Stuart, 2013), the French educational authorities tend to promote evidence-based practices to reduce difficulties in children during kindergarten and more specifically to stimulate literacy skills. Indeed, a significant proportion of children in France, and in particular those from lower socio-economic status (see Fluss et al., 2008), experience considerable difficulties when learning to read. The general purpose of this article is to present how new pedagogical practices implemented by teachers trained in evidence-based research could improve literacy skills in young children.

For over three decades, evidence-based research has clearly revealed that reading is underpinned by two components, namely word recognition and reading comprehension. Indeed, developmental studies have provided evidence of distinctive and stable predictors of these components (Elwér, Keenan, Olson, Byrne, & Samuelsson, 2013; Kendeou, Van den Broek, White, & Lynch,

* Corresponding author. Laboratoire EMC, University of Lyon2, 5, av Mendès-France, 69676 Bron Cédex, France.
E-mail addresses: ecalle.jean@wanadoo.fr, jean.ecalle@univ-lyon2.fr (J. Ecalle).

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2009). Based on this scientific knowledge, it might be possible to promote best practices to stimulate the emergent literacy skills which are considered to be the foundation of reading (Greenwood, Tapia, Abbott, & Walton, 2003). To this end, a large-scale study conducted with more than three thousand children in kindergarten was carried out and is reported here.

1.1. Learning to read and emergent literacy skills

According to the Simple View of Reading (Gough & Tunmer, 1986; but see also Aaron, Joshi, Gooden, & Bentum, 2008; Kendeou, Savage, & van den Broeck, 2009), reading comprehension can be thought of as the product of word decoding, which is specific to reading and is responsible for translating print into language, and language comprehension skills that make sense of this linguistic information. Numerous studies have indicated that reading acquisition requires many important component skills, namely phonological processing abilities, print knowledge, and oral language, e.g., vocabulary, grammar, comprehension (Elwér et al., 2013; Oakhill & Cain, 2012). The evidence indicates that these skills are present during the preschool period. Thus, some emergent literacy skills are code-related, and other emergent literacy skills are meaning-related.

1.1.1. Predictors of word recognition

Among the various candidate predictors (in alphabetic languages) that might explain improvements in word reading, it seems that letter knowledge and phonological awareness are among the best and most robust predictors of multiple reading outcomes in Grades 1 and 2 (for a recent French longitudinal study, see: Costa et al., 2013; in Finnish: Puolakahano et al., 2007; in English: Schatschneider, Fletcher, Francis, Carlson, & Foorman, 2004; in Hebrew: Levin, Shatil-Carmon, & Asif-Rave, 2006). Indeed, according to the self-teaching hypothesis, the development of word reading is based on decoding procedure which requires the involvement of letter knowledge (name and sound) and phonological awareness. Knowledge about letters (their shapes, their names, and their linguistic functions) is known to play an important role in the development of reading and spelling ability (Foulin, 2005; Huang, Tortorelli, & Invernizzi, 2014; Treiman, 2006) provided that the children are proficient speakers of the language being read. Children's ability to identify letter names and letter sounds has been shown to be one of the best indicators of reading achievement (Ecalle, Magnan, & Biot-Chevrier, 2008; Puranik, Petscher, & Lonigan, 2013).

Moreover, a large body of evidence has emphasized the important role of phonological awareness as a significant predictor of the learning of word reading (Castles & Coltheart, 2004). More precisely the pivotal role of phonemic awareness as a predictor of individual differences in reading development has recently been pointed out in a meta-analytic review (Melby-Lervåg, Lyster, & Hulme, 2012). Researchers have suggested that the relationship between phonological awareness and reading is bidirectional such that phonological awareness facilitates reading abilities and reading acquisition in turn improves phonological awareness (Morais, 2003). These studies have often been limited to an investigation of the relations between explicit awareness of phonological units and reading. They have not considered the early phonological sensitivity children acquire through implicit learning before formal instruction (however, see Ecalle & Magnan, 2002, 2007; Savage, Blair, & Rvachew, 2006). Many studies suggest that phonological awareness is a single, unified ability that is present during the preschool and early elementary school years and that manifests itself in a variety of skills throughout a child's development (Anthony & Francis, 2005).

In summary, a number of different studies have shown that kindergarten measures of phonological awareness and alphabet knowledge are highly predictive of reading achievement in the primary grades. As a result, the present study will place the emphasis on children's phonological awareness and alphabet knowledge.

1.1.2. Predictors of reading comprehension

Numerous studies have examined different predictors of reading comprehension. The literature emphasizes four of these predictors: grammatical skills (Muter, Hulme, Snowling, & Stevenson, 2004; Nation & Snowling, 2000; Oakhill, Cain, & Bryant, 2003), working memory (Cain, Oakhill, & Bryant, 2004), inferencing (Kendeou, Bohn-Gettler, White, & Van Den Broeck, 2008), and more importantly, vocabulary and oral comprehension.

Indeed, measures of general oral language have repeatedly been found to be strongly related to early reading achievement, specifically in the domain of reading comprehension. Results have shown that early comprehension performance, assessed in 6-year-old children kindergarten or in 4-year-old children preschool by means of non-reading tasks, is highly predictive of later reading comprehension performance (Kendeou et al., 2008). Moreover, vocabulary has also been identified as a skill that plays a critical role in reading comprehension performance throughout the elementary period (Verhoeven, van Leeuwe, & Vermeer, 2011). The lexical quality hypothesis states that the degree of comprehension is influenced by the size of the lexicon, as well as the quality and flexibility of individual lexical representations (Perfetti & Stafura, 2014). In addition, a strong relationship between vocabulary and comprehension has been found in school-age children (Cain & Oakhill, 2011; Lonigan, Burgess, & Anthony, 2000; Vellutino, Tunmer, Jaccard, & Chen, 2007), and young children (Florit, Roch, Altoè, & Levorato, 2009; Roth, Speece, & Cooper, 2002). However, according to the lexical restructuring hypothesis, vocabulary can provide the foundations for phonological sensitivity (Dickinson, McCabe, Anastasopoulos, Peisner-Feinberg, & Poe, 2003).

Thus, different emergent literacy skills are differentially predictive of different components of reading. In this study, we focused on letter knowledge, phonological skills, vocabulary and oral comprehension. The present research mobilizes evidence-based pedagogic tools developed within the framework of developmental cognitive psychology studies that have attempted to identify the main predictors of learning to read. Our aim is to test the effectiveness of early interventions in boosting the literacy skills described as predictive of reading and to examine their impact on early reading performance.

1.2. Evidence-based emergent literacy practices

During preschool and kindergarten, children show considerable variability in their levels of emergent literacy skills (Cabell, Justice, Konold, & McGinty, 2011). Numerous studies suggest that the majority of reading problems could be prevented by reducing the number of children who enter school with low levels of emergent literacy skills (Snow, Burns, & Griffin, 1998). Targeted interventions could be proposed in the light of evidence-based research. “Evidence-based practices are instructional techniques with meaningful research supporting their effectiveness that represent critical tools in bridging the research-to-practice gap and improving student outcomes” (Cook & Cook, 2011, p. 71). Because two types of specific predictors of reading ability have been identified, one for word reading and one for reading comprehension, two types of early intervention could be used in a focused way to boost code-focused and/or meaning-focused skills.