

# PROJECT BEE-S: HOW CHILD LEVEL AND ITEM LEVEL FACTORS IMPACT SPELLING PRODUCTION IN ELEMENTARY STUDENTS

## Introduction

Early literacy development is a critical foundation for academic success during the elementary school years. Evidence suggests that successful spelling depends on coordinating multiple sources of knowledge, including phonological and morphological knowledge (Apel & Masterson, 2001; Richards et al., 2006; Treiman & Kessler, 2014). The links between language and spelling framework (see Figure 1) highlights these areas (Moxam, 2020). This perspective aligns with other theoretical accounts, which also emphasize the importance of interconnected components in literacy (Perfetti & Hart, 2001; Perfetti, 2017; Seidenberg & McClelland, 1989). Because phonological and morphological patterns can differ across language varieties, or dialects, some students may demonstrate spelling patterns that reflect the structure of their primary dialect.

- African American English (AAE) is a systematic, rule-governed language variety with phonological and morphological patterns that differ from those represented in school-based print (Washington & Seidenberg, 2021)
- Studies examining African American English (AAE) speakers show that children's ability to shift between dialects and academic language is associated with literacy performance across early grades (Craig et al., 2014).
- Meta-analytic findings further suggest that dialect use is systematically related to reading and writing outcomes, indicating that higher dialect density is associated with lower literacy performance (Gatlin & Wanzek, 2015).

Despite extensive research on literacy development, few studies have directly examined how multiple aspects of language and literacy relate to spelling in elementary speakers of AAE. The present study addresses these gaps by examining relationships between language, literacy, and item characteristics to spelling outcomes among first and second grade students.

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## Methods

COMPONENT	DESCRIPTION
Participants	75 First- and second-grade students from a public school in a mid-sized city in the United States.
Assessment Structure	Participants completed a three-day assessment battery using standardized and researcher-designed measures.
Day 1	30-item spelling assessment
Day 2	CTOPP-2: Phonological processing TOWRE-2: Word reading; Sight words and non-words DELV-ST: Dialect use
Day 3	CELF-5: Oral language
Data Management	All data will be entered and managed using REDCap (Harris et al., 2009)
Planned Analysis	Explanatory Item Response Modeling (EIRM)

## Results

Data collection is ongoing. We will use a cross-classified item response model to examine how spelling performance varies based on characteristics of children and test items.

## Discussion

This study is designed to examine how children's skills (e.g., oral language, dialect density, phonological processing) and item features (e.g., phonological structure of words) relate to spelling performance in first- and second-grade students. Because data collection and scoring are still ongoing, we are not yet able to report results. Prior research has documented associations between dialect density and literacy skills, including spelling (Gatlin & Wanzek, 2015). The findings from this project may help clarify how dialect density relates to spelling accuracy alongside other language skills and item-level features. This work has the potential to inform educational and clinical practices that support early literacy development in the early elementary years.

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Figure 1. Links between language and spelling (Moxam, 2020)



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