Effects of Oral Proficiency and Comprehensive Literacy Intervention on English-language Learners’ Reading Fluency Development in Grades 1-3

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Abstract

This study investigated the developmental trajectory of reading fluency and the effects of oral language proficiency (OLP) and instructional setting on fluency development for 123 English-language learners (ELLs) in Grades 1-3. We used archived data from a large-scale, randomized research project, which evaluated Project ELLA, a multi-tiered intervention targeting English oral language, vocabulary, and literacy development for English-learners (K-Grade 3). Multiphase growth models were fit to repeated-measures oral reading fluency (ORF; DIBELS) scores. Results indicated that OLP was a statistically significant predictor of initial ORF but not of ORF growth. Additionally, intervention students accelerated ORF growth compared to control students.

Methodology: Design

**Project ELLA (English Language/Literacy Acquisition)**

- **Large-scale, longitudinal, randomized research project**
- **Primary goal:** Compare Spanish-speaking ELLs’ language and literacy acquisition in typical and enhanced models of structured-English immersion (SEI) and transitional bilingual education (TBE) from K to Grade 3
- **Included 822 kindergarten ELLs; 390 remained in Grade 3; average annual attrition rate of 13.1%**
- **Context:** Large urban school district in Southeast Texas
- **46% Hispanic, 80.1% economically disadvantaged, 31% limited-English proficient, 24.7% district mobility rate**

Methodology: Participants & Data Collection

**Participants**

- **Schools:** 18 schools: 8 intervention, 10 control
- **Random assignment to intervention or control condition**
- **Students:** n=123, Grade 1-3
- **Classified as limited English proficient in K-Grade 3**
- **Home Language Survey Indicated Spanish as L1**

**Intervention Conditions**

- Implemented from K to Grade 3
- Progression of L2 emphases: Oral Language (K-1st) → basic reading skills (1st-2nd) → content-area reading skills (3rd)

**Method: Data Analysis**

**Model Estimation & Fit**

- **Series of two-level models hypothesized**
  - Level 1: 8 within-child, repeated-measures of ORF; 984 observations
  - Level 2: student-level predictors of initial OLP and intervention group (0-control group, 1-intervention group)

**Models estimated using HLM 6.08 Software**

- Models evaluated using deviance, likelihood ratio tests

**Model Descriptions**

- Preliminary: Unconditional linear model
- Unconditional linear and quadratic growth models
- Conditional quadratic growth model w/ grand-mean-centered OLP as a predictor of intercept and linear growth
- Conditional quadratic growth model w/ grand-mean-centered OLP as a predictor of intercept and intervention as a predictor of intercept and linear growth

**Results**

**ORF Growth Trajectory**

- The quadratic growth model provided improved fit compared to the linear model (r(1)=45.4, p<.001); therefore, ELLs’ ORF growth trajectory in Grades 1-3 was curvilinear.
- Average initial status in ORF (MOY, Grade 1) was 40.50 wcpm (t(122)=14.84, p<.001).
- Average linear growth was 2.76 wcpm per month (t(122)=17.87, p<.001).
- The small, negative quadratic parameter (β=-.05, (981)=-6.84, p<.001) indicated slight deceleration in growth over time.

**Effect of Initial OLP**

- OLP was a statistically significant predictor of ORF initial status (β=-.51, (121)=3.19, p<.002) but did not predict ORF growth (β=.005, (121)=.15, p>-.27).
- ELLs with a mean IRT score read 4.50 wcpm less in the initial ORF assessment; 1 correct answer on the IRT yielded a .51 wcpm improvement in ORF.

**Effect of Initial OLP**

- ELLs’ L2 ORF growth was curvilinear, steeper in early grades with slight deceleration over time. This trajectory is consistent with findings from previous studies of native English speakers (Baker et al., 2008; Fuchs et al., 1993; Kim et al., 2010; Speece & Ritchey, 2005) and ELLs (Al Otaiba et al., 2009; Dominguez de Ramirez & Shapiro, 2006).
- Initial L2 ORF predicted initial L2 ORF, indicating that OLP may be an important precursor skill for L2 reading fluency (Geva & Zadeh, 2009; Yesil-Dagli, 2011). ELLs with stronger L2 OLP are more proficient L2 readers (Geva, 2006; Saunders & O’Brien, 2006).

**Students in ELLA intervention began with lower ORF levels compared to control students; however, ELLA students showed increased linear growth, such that they had caught up with control students by the end of Grade 3. This confirms and extends previous findings that ELLA was effective for developing L1 literacy**

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Effects of OLP Intervention on English and Reading Fluency Growth by OLP. The shaded background indicates risk status according to DIBELS ORF benchmark goals for 3 assessment periods per year (“DIBELS Benchmark Goals”, n.d.). WCPM = words correctly read in 1 min.

Figure 5. Fitted trajectories for ELLs’ English oral reading fluency growth by risk. The shaded background indicates risk status according to DIBELS ORF benchmark goals for 3 assessment periods per year (“DIBELS Benchmark Goals”, n.d.). WCPM = words correctly read in 1 min.