

# Effects of the Literacy Express Curriculum (LEC) on Children's Language Development

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**Introduction:** The educational achievement gap of ethnic minority students with socioeconomic disadvantage has raised concerns in educators and researchers. A Language Expressive Curriculum (LEC) was developed to improve preschool children's academic outcomes. This study aimed to investigate sociodemographic and linguistic factors that would affect children's developmental trajectory. More importantly, the study would examine whether LEC would improve preschool children's readiness for elementary school, specifically for children from low-income families.

## Hypothesis

- Baseline measures would predict language performance at Wave 1, and all Wave 1 measures would predict the same measures at Wave 3.
- The intervention would significantly increase all scores of measurements at Wave 3.
- Expressive vocabulary, language development, and phonological awareness at Wave 3 would predict reading comprehension and reading decoding ability in Wave 5, with intervention having a significant impact on both measures as well.

## Participants

- 760 students from 110 randomized classrooms with approximately eight students from each classroom.
- 320 children (female = 165) with complete data from Wave 1 to Wave 5 were included in the data analysis.
- The average age was 4.54 years old; 62% of the participants were African Americans, and 38% were White Americans.

## Measurements

- **Nonverbal Cognitive Ability:** measured by the Pattern Analysis subset of the Stanford-Binet IQ test
- **Word Span:** measured by the Verbal Rote Memory subset of Pre-CTOPP
- **Language Development:** measured by DELV-RISK
- **Expressive Vocabulary:** measured by EOWPVT
- **Phonological Awareness:** measured by TOPEL
- **Reading Decoding:** measured by the Letter-Word Identification subtest of WJIII Achievement Tests
- **Reading Comprehension:** measured by the Passage Comprehension subtest of WJIII Achievement Tests

## Results

Our path analysis model fitted the data well (CFI = 0.95, RMSEA = 0.08)

### -Longitudinal Changes

- Baseline measures significantly predicted language performance at Wave 1
- Wave 1 measures including expressive vocabulary, language development, and phonological awareness significantly predicted Wave 3 measures, and Wave 3 measures significantly predicted reading abilities at Wave 5

### -Intervention effects

- There was no intervention effects at Wave 3.
- Children who received LEC had significantly better reading comprehension scores at first grade than those who did not.

## Discussion

- Preschool children's language performance improved over time
- LEC did not improve preschools' language performance immediately after the intervention
- LEC intervention had a positive effect on preschool children's reading comprehension at their first grade
- Our study excluded missing data, which could lead to selection biases.

## Acknowledgement

Lonigan, C. J., Phillips, B. M., Clancy, J. L., Landry, S. H., Swank, P. R., Assel, M., ... & Eisenberg, N. (2015). Impacts of a comprehensive school readiness curriculum for preschool children at risk for educational difficulties. *Child Development*, 86(6), 1773-1793.

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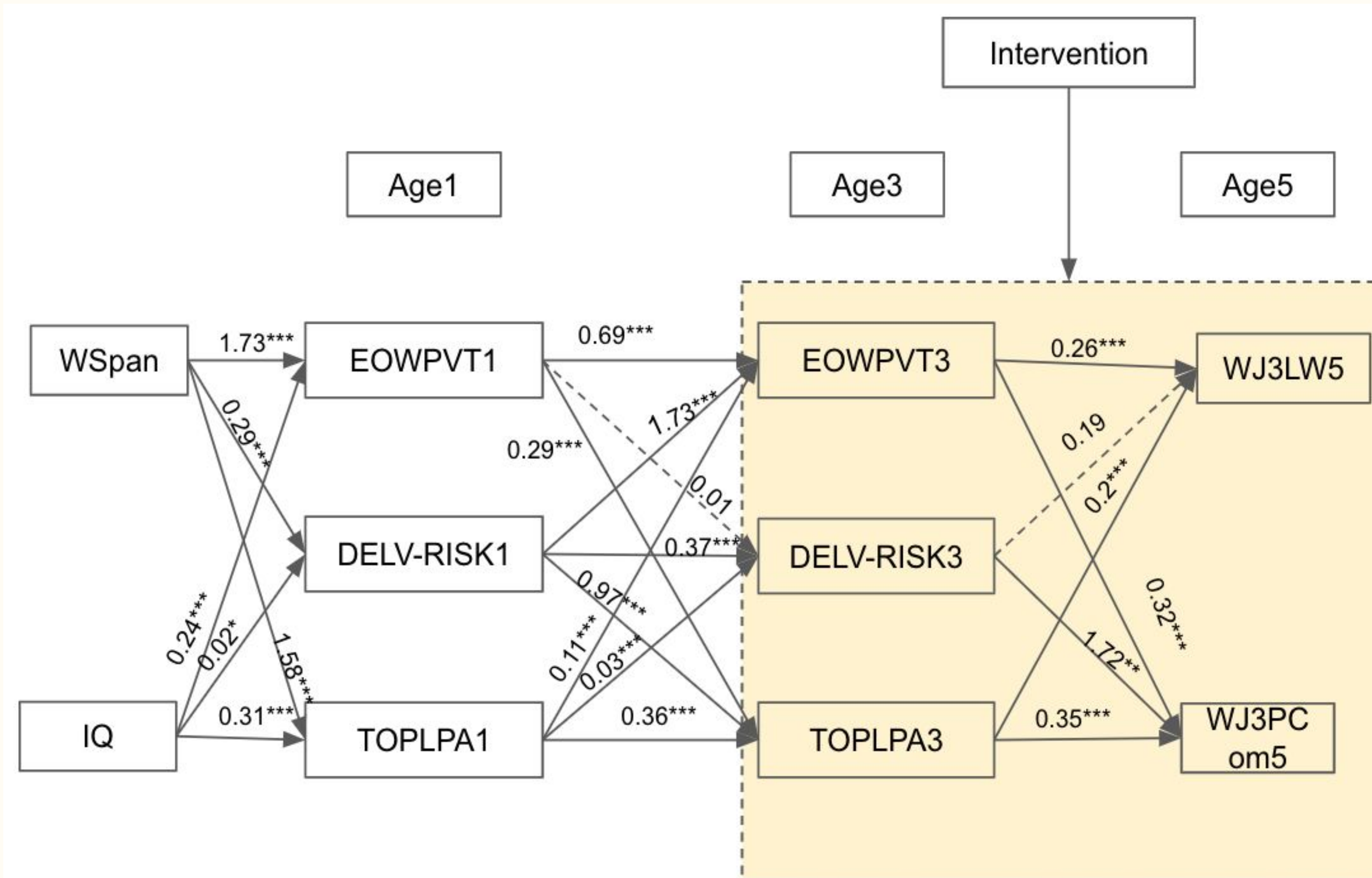


Figure 1: Path analysis on children's language measurement across times

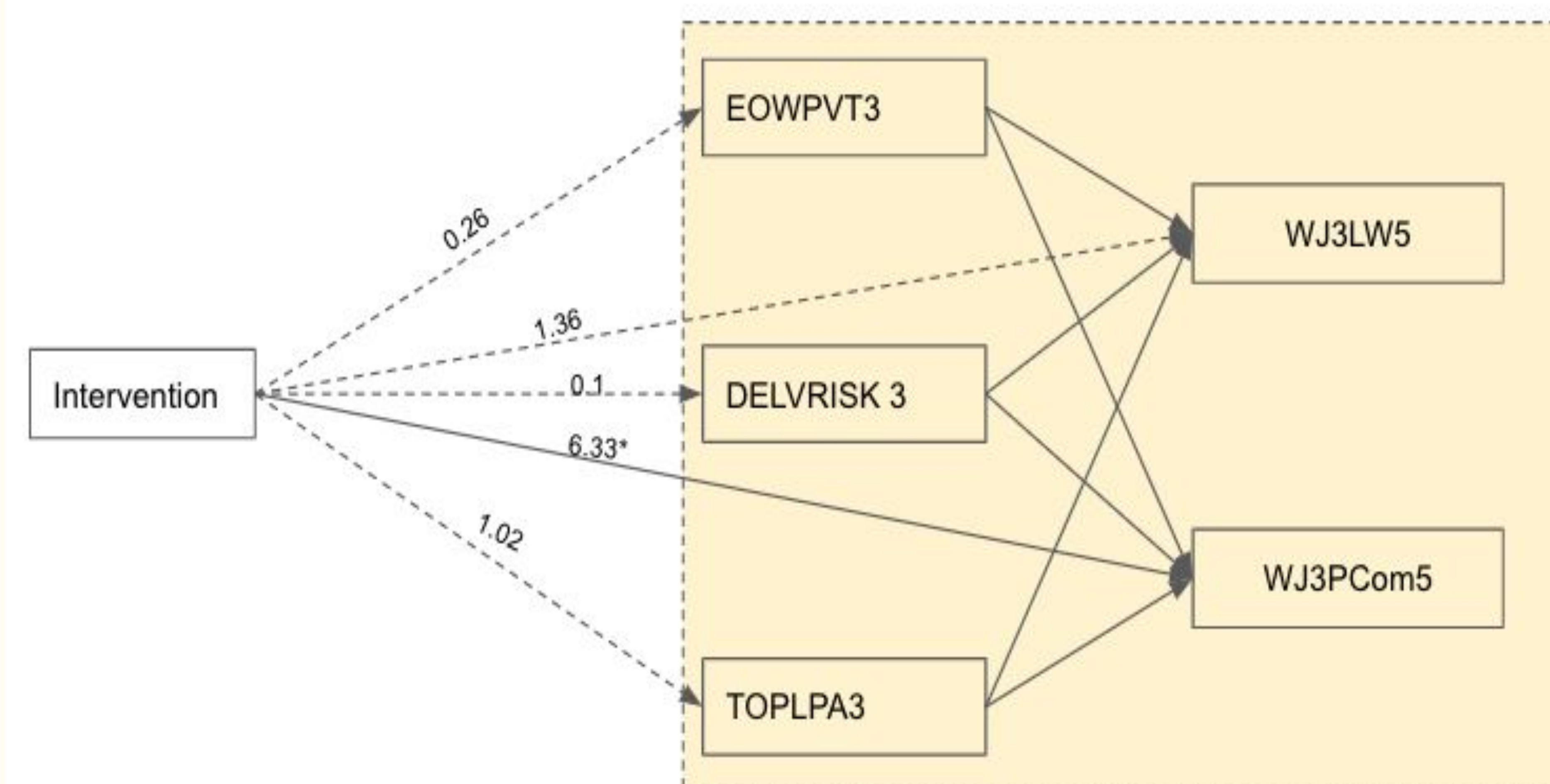


Figure 2: Intervention effect on children's language measurements