

## Evaluating Educational Touchscreen Apps to Support Preschool-Age English Language Learners (ELL)

HITN Early Learning Collaborative (ELC)



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## WHO WE ARE

MICHAEL COHEN GROUP LLC

## WHO WE ARE

### MCG

- independent evaluator for the HITN Early Learning Collaborative (ELC) funded by the current round (2010-2015) of Ready to Learn (RTL).

### HITN ELC

- producing a suite of transmedia products to support young children's early literacy and math skills, as well as English language development for children whose primary language is Spanish.
- products feature Pocoyo and his friends

### MCG research

- Formative - during development of the products
- Summative - the assessment of two *Pocoyo PlaySets* (apps) focused on English language development (ELD) for children who are English language learners (ELL).



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## BACKGROUND



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### ELL children

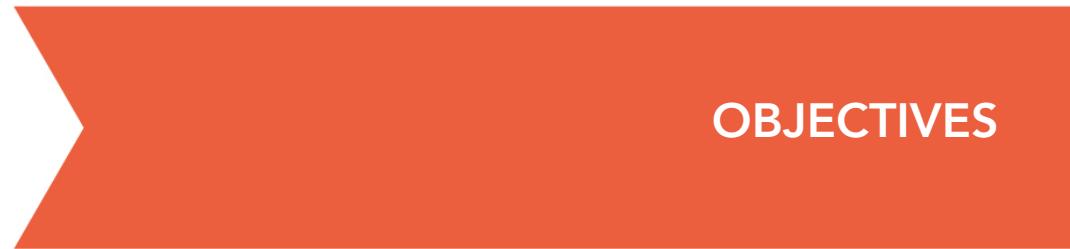
- Over 20% of the nation's young children and growing
- Academic performance lags behind their English speaking peers.

**Pocoyo ELD PlaySets** (apps with game, story and music components) reflect the current theory and best practices for supporting ELL children:

- Building comprehension in English for ELLs begins with their understanding concepts in their first language.
- With support, children can transfer knowledge to English more rapidly, thus constructing meaning on a deeper level (Espinosa, 2010; Miller & Garcia, 2008).



The design of the Pocoyo ELD PlaySets reflects this pedagogical approach.



## OBJECTIVES

The objective of the summative evaluation of the *Pocoyo ELD PlaySets*, *Things that Go* and *At the Seashore*, is to assess their educational impact in terms of children's:

- **Acquisition of target vocabulary**
- **Increase in English fluency**

Additional goal: explore how the "best practices" pedagogy for classroom instruction of young ELLs applies to their informal use of educational media informed by this pedagogy



## METHODOLOGY



## DESIGN

### Randomized Control Trial

**Sample** 580 children

Between 3 and 5 years old

Attending daycare/preschool centers

Identified by their school as Spanish-speaking ELLs

**Sites** 53 classrooms

15 centers

New York, NY; Bridgeport, CT; Miami, FL; Los Angeles, CA



## METHODOLOGY

### **Classrooms randomly assigned to:**

- Treatment group - use *Pocoyo PlaySets*
- Comparison group - use commercially available apps for Spanish-English learning that include similar words/content as *Pocoyo PlaySets* (colors, shapes, vehicles)

### **Pre- and post-testing**

- Standardized and customized measures

### **Three-week placement** of PlaySets

- Children played three times a week as part of "free play" activity, not formally taught



## MEASURES

### Standardized Measure

- Pre-IPT Oral English Test

### Customized Measures

- Picture Recognition Vocabulary Test
- Touchscreen Familiarity Test
- *Pocoyo* Familiarity Test

### Log and observations

- Teacher logs
- Classroom observation logs
- One-on-one child observation logs



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## RESULTS



## RESULTS

Treatment Condition => **significant gains in target vocabulary** when compared to results for children in the Comparison group ( $p < .001$ ).

Treatment v. Comparison groups did **not** show significant overall effects on children's overall category of English fluency ( $F (1,53 \text{ df}) = 0.1, p < .76$ ). The effect size for these findings is  $d=.21$ .



## RESULTS

The **relative benefit** of engaging with the *Pocoyo PlaySets* for learning target vocabulary was found to be **significantly greater for children who had a lower level of initial English proficiency, and/or had Spanish spoken to them by caregivers** ( $F(1, 525 \text{ df}) = 3.9, p < .05$ ).

The overall significant effects **did not vary** by gender, parent education, household income, region, previous experience with touch screen technology, *Pocoyo* familiarity, whether the child's first language was English or Spanish or was born in the U.S..

### Qualitative findings

- Children were drawn to and engaged in play with the *PlaySets*
- Their engagement evolved from exploratory to intentional play



## IMPLICATIONS



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The findings of this study suggest that:

**A wide range of children can benefit** from interacting with ELD *PlaySets*, regardless of differences in demographics or circumstances.

**Incorporating effective classroom approaches** to language development for ELLs into digital games can have a positive impact on the learning outcomes of these children.



## ANTICIPATING QUESTIONS



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### **Which activities were used more?**

The Pocoyo PlaySets provide a range of activities including games, story and music. We do not have data on which specific activities within the PlaySets were played more often or which were more important to children's learning.

Determining which components of a complex media property are more or less effective or engaging is a major challenge for evaluation of transmedia systems.

However, this study does provide positive findings on the effectiveness of an educational media experience used informally and independently in a classroom.



## ANTICIPATING QUESTIONS

Are **open access, choice and independence** within a supportive classroom framework a motivating factor?

Are **open access, choice and independence** particularly important for ELLs in order to reduce possible stigma for children who may feel singled out by more formal instruction?



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¡Gracias! / Thank you!