

Supporting Parent-Child Experiences with *PEG+CAT* Early Math Concepts



Context

This research is part of the summative evaluation of the CPB-PBS Ready To Learn Initiative, which is supported by the U.S. Department of Education and seeks to develop engaging, high-quality educational programming and supports for two- to eight-year-old children living in low-income households. During the 2010-2015 grant cycle, Ready To Learn aimed to deliver early mathematics resources on both established technologies (computers, video displays, and gaming consoles) and emerging digital platforms (tablet computers, interactive whiteboards, and smartphones) to create anytime-anywhere learning experiences.

This Study

The study presented here addresses the question of how time spent viewing and playing with PBS KIDS educational, non-commercial media at home, in family settings, can foster positive outcomes for children and parents/caregivers. The study focused on PEG+CAT, a first-generation transmedia program designed to promote children's mathematics and approaches to learning (ATL) skills.

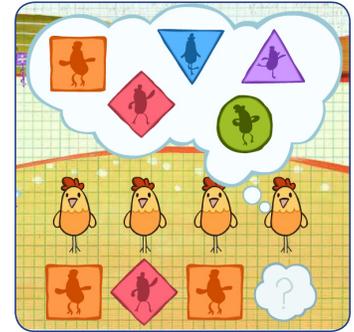
Target mathematics skills included patterns, geometry (2-D and 3-D shapes), ordinal numbers and counting, and measurable attributes and spatial relationships. Target ATL skills included problem solving, perseverance, and self-regulation.

Study Components

- The study sample included 197 four- and five-year-old children and their families from low-income communities in the New York City and San Francisco Bay areas. Study families were predominantly Latino, Asian American, and African American.
- Participating families were randomly assigned to one of two conditions: the PBS KIDS PEG+CAT condition or the business as usual condition.
- Families in the PBS KIDS condition were provided with technology tools (an Android tablet and a Chromebook laptop), a curated PEG+CAT experience (videos, games, and supplemental activities addressing target mathematics and ATL skills), and supports to help parents jointly engage with their children around the media (parent tip videos, an Experience Guide, and weekly text messages).
- Families in the business as usual condition were asked to continue with their typical home behaviors with regard to children's technology and media use.

Findings

- Children who participated in the PBS KIDS PEG+CAT intervention exhibited statistically significant improvements in the mathematics skill areas of ordinal numbers, spatial relationships, and 3-D shapes as compared to children in the business as usual condition.
- Parents and caregivers in the PBS KIDS condition reported a higher frequency of joint parent-child technology use, more joint gameplay, and more conversation connecting digital media and daily life than did business as usual parents and caregivers.
- PBS KIDS parents and caregivers reported significant increases in their confidence to support math learning for their children, as compared to business as usual families. A higher proportion of parents and caregivers in the PBS KIDS condition reported engaging in problem-solving strategies with their children at the close of the study than did parents/caregivers in the business as usual condition.
- Children used the PEG+CAT intervention media resources most often with their parents/caregivers, and parents in the PBS KIDS condition engaged in more joint media use with their children when compared to parents in the business as usual group.
- PBS KIDS families reported finding the majority of the PEG+CAT intervention resources to be fun and engaging. Some parents noted how the games and videos complemented each other in a beneficial way, making the content more meaningful through opportunities for practice.



Interested in more?

For readers interested in a more detailed look at these findings, including illustrative examples, recommendations, and a detailed description of research methods, the full-length report and executive summary for this study are available at:

cct.edc.org/rtl

There you'll also find other current and past Ready To Learn summative research studies. And, to speak with the evaluation research team, please contact:

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