Learning Math with Curious George: PBS KIDS Transmedia and Digital Learning Games in the Preschool Classroom

A Report to the CPB-PBS Ready To Learn Initiative

Betsy McCarthy, Ph.D.
Michelle Tiu, M.Ed.
Linlin Li, Ph.D.

September 2014
Highlights of the Findings

WestEd conducted a classroom-based study during the summer of 2014 for the CPB-PBS Ready To Learn initiative in order to investigate children’s relatively unmediated use of the Curious George’s Busy Day transmedia suite (digital games, hands-on learning activities, and video episodes) in supporting preschool students’ mathematics learning in the classroom environment. The intervention involved a blended learning experience that took place at learning stations in the preschool classroom. The current study explored the effectiveness of the Curious George’s Busy Day transmedia suite in supporting preschool students’ mathematics learning in the preschool classroom environment. In addition, the study examined the affordances (features and advantages) of transmedia-based learning in the preschool classroom.

Findings Around Children’s Knowledge and Skills in Mathematics

- Over the course of the Curious George mathematics intervention, children’s knowledge of mathematics increased significantly, as measured by selected items from the Test of Early Mathematics or TEMA-3 (Pre $M = 21.04$, Post $M = 23.75$, $p<0.01$).
- Children showed significant and positive pre- and post-changes on mathematical skills related to number comparison (Pre $M = 5.98$, Post $M = 7.06$, $p<0.05$) and informal concepts (Pre $M = 0.86$, Post $M = 1.12$, $p<0.05$).
- The results indicated that children with lower pre TEMA-3 scores gained significantly on numbering (Pre $M = 6.24$, Post $M = 18.20$, $p<0.05$); whereas children with higher pre TEMA-3 scores gained significantly on mathematical skills related to number comparison (Pre $M = 7.65$, Post $M = 9.12$, $p<0.05$) and informal concepts (Pre $M = 1.38$, Post $M = 1.77$, $p<0.01$).

Affordances of Using Curious George Math in the Preschool Classroom

- Findings suggest the playful and engaging structure and narrative of the transmedia suite was highly motivating for the students. Data analysis suggests that students were highly engaged in all aspects of the suite, including watching the video episodes at home. Teachers felt that the engaging aspects of the materials contributed to students’ persistence and positive engagement with the mathematics content in the intervention.
- Data from researchers and teachers suggest that children’s self-directed use and free choice in game play led to increased collaborative learning and discourse around mathematics within the classroom.
- The collaborative play fostered by use of the intervention led to additional opportunities for developing children’s socio-emotional skills, such as listening and communication, respecting others, and cooperation and sharing.
- By working together on the Curious George’s Busy Day digital learning games, students had the opportunity to learn digital literacy skills from one another.
- The ability of the digital games to provide hints and scaffolds for struggling students and the ability of adaptive leveling to adjust game play to easier or more difficult levels of academic content based on students’ mastery of that content supported students’ self-paced learning and allowed students to practice skills until they had mastered them.
- Teachers found that, by observing their students interacting independently with the games, they were able to increase their knowledge about their students’ learning and mathematical development.
To speak with the evaluation team, please contact:

Betsy McCarthy  
650.381.6441  
bmccart@WestEd.org

Linlin Li  
650.381.6449  
lli@WestEd.org