4-5-2017

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Effects of Playing Computerized versus Tactile Learning Games on Preschoolers’ Attention Skills and Comprehension: A Pilot Study

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Introduction

- Early childhood is a significant time for cognitive development, including early literacy and numeracy skills (Purpura, Hume, Sims, & Lonigan, 2011; Blair & Razza, 2007).
- Both tactile number games interventions and computerized number games interventions have been shown to improve young children’s number sense (Wilson, Dehaene, Dubois, & Fayol, 2009).
- However, it is unclear how activity format (tactile vs. computerized) affects children’s attention and comprehension while playing these games.
- Hypotheses: Children’s attention will be greater while playing the computerized game, but children will have a greater understanding of the game when it is a tactile board game.

Method

- Children (N = 12; Age= 3-6 ) were randomly assigned to play a tactile or computerized version of the Linear Numbers Board Game (Siegler & Ramani, 2009).
- Videotapes of game play were coded for children’s attention (how long before they looked away), distraction (how many times they looked away), and comprehension (how many errors they made).

Results

Comparisons Between Completing Tactile and Computerized Games on Attention and Understanding

- Older children attended more to the game regardless of the condition and also made fewer errors.
- Children paid more attention and were less distracted in the tactile version of the game compared to the computerized game.
- Children had a harder time understanding the tactile version of the game compared to the computerized version.
- Potential explanation: research indicates executive functioning skills are linked with motor skills.
- Tasks that require complex motor skills appear to strain cognitive resources in young children (Cameron et al., 2012).
- Having the added component of physically moving the pieces in the tactile version may leave more room for error.
- Limitations: sample size, difficulty operating laptop and understanding number line.
- Future research: impacts on other skills, long-term effects.

Comparisons Between Completing Tactile and Computerized Games on the Number of Times Looked Away

Conclusions

- Future research: impacts on other skills, long-term effects.

References: Not provided in the text, but could include works cited related to early childhood development, cognitive skills, and the effects of different game formats on children's learning.