

3. Card Overview



System Design

Child-Parent Use of a Tablet App for Training Self-Control

Child-Parent Co-Play

Pre-School

Executive Function

Preschool children are instructed to touch or not touch objects with specific characteristics in a tablet-based system to learn about self-control.

Self-Control



 3, 4, 5

 Tablet

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Type of Research

Card Title

Keywords

Summary Overview

Sub-Domain

Age

Platform

Context

4. Card Detail Page



Home Page/Search Results

Child-Parent Use of a Tablet App for Training Self-Control

No Touch Pig! Investigating Child-Parent Use Of A System For Training Executive Function
2019 Kiley Sobel, Kate Yen, Yi Cheng, Yeqi Chen, Alexis Hiniker



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Request Paper

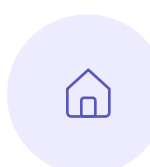
Cognitive/ Self-Control



3, 4, 5



Tablet



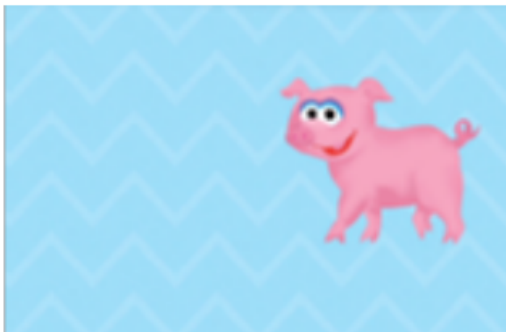
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Developmental Goals

- Preschool children are developing “executive function” skills which include remembering information to complete a task, directing attention to complete a task, and self-control. These skills are related to successful learning, careers, health, and well-being.
- This study focuses on designing systems for developing self-control skills.

System Descriptions

- What do children do with the system:**
Children and their parents play with a commercially available tablet-based app called “Cookie Monster’s Challenge,” specifically 3 games within the app:
 - 01. clicking objects with particular characteristics while avoiding objects without those characteristics (ex. Dogs with hats vs. dogs without hats)
 - 02. clicking a red or blue button when they see objects with particular characteristics
 - 03. clicking an object (a pig) when instructed to do so while not clicking the pig when told not to click the pig.
- How does the system support the developmental goals:**
These games ask children to remember and distinguish particular characteristics of objects and use self-control to avoid clicking certain objects.
- Interaction:**
Clicking objects that appear and move on the screen or buttons.



Actionable Stratgies

- 01. Practical insights generalizable to other system designs:**
For preschool children, design systems that encourage collaborative interaction between parents and children, and provide on-screen support for parents on successful strategies to guide their child’s behaviors.

Provide a background story to explain why children should exhibit self-control. For example, do not touch a new plant until it is grown.
- 02. Support for design decisions:**
Principles and guidelines for design

Provide text-based on-screen supports for parents to guide child behaviors.

Provide interventions when ineffective strategies are detected, such as hovering above or clicking around something that should not be clicked.

What was successful

- Some children used strategies described in previous research to encourage self-control and following the rules: repeating the rules outloud or moving their hands to avoid clicking when they weren’t supposed to.
- Some parents supported their children to complete the games successfully by repeating instructions.
- Unlike children who used a control system, those who used the app improved their score on a test of executive function skills after using the app compared to before using the app.

What was NOT sucessful

- Some children used an ineffective strategy: tempting themselves to click objects they were supposed to avoid by holding their fingers above the object or clicking around the object. This often led to failure to complete the task.
- Some parents did not know how to provide support to their children: some interfered before a child could attempt a task, some did not provide support even when their child struggled, and some provided support that research suggests undermines success, for example, focusing on tempting aspects of the tasks.
- No parents suggested distraction techniques which research suggest is the most effective strategy for self-control (not clicking the pig).
- Parents had trouble motivating why children should not click the pig because the task provided no narrative context.

Key Takeaway

Design systems that encourage collaborative interaction between parents and preschool children and provide on-screen support for parents on successful strategies to guide their child’s behaviors.