

Research Question:

- How do families respond to an adaptive magnitude comparison eBook?
 - Will families read above the at or above the request of 8 times across two weeks?
 - Do families who read more show more or less accuracy on eBook page questions?

The main goal of my research is to figure out if our adaptive magnitude comparison eBook is an effective way to improve children's magnitude comparison skills. This goal is a part of a larger study that I am doing with Dr. Fuhs and Patrick Ehrman. My other goal is to understand how parents and children are interacting with the eBook. Do they like the eBook and is it something that they would invest in outside of a study?

Introduction:

- Finding effective technology is important for children's learning during the pandemic, as families may not have quick access to sufficient high-quality, classroom-like resources.
- This project is part of a larger evaluation of the effectiveness of adaptive magnitude comparison eBooks for improving preschoolers' math skills.

There are many educational apps that parents can find for their children at home, however not many of the apps are empirical based. The goal of our app is to give parents an up-to-date, empirical based app that will help improve children's math and magnitude comparison skills.

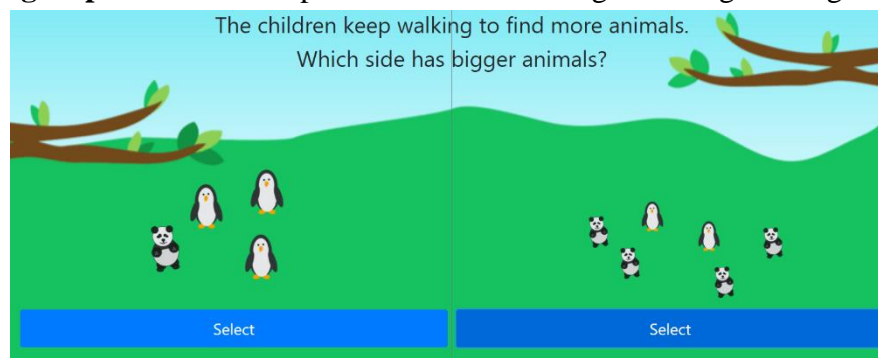
Method:

- Families were asked to read adaptive magnitude comparison eBooks four times a week for two weeks.
- Data was collected on how many books they read and how many times they answered questions on each page correctly.
- Sometimes children were asked to choose the bigger set of items, sometimes they were asked to choose the larger set of items.
- There were 15 questions per book, and each question varied across easy, medium, or challenging complexity based on how many questions children got correct in the prior series.

Control group: read a non-adaptive eBook only.

Experimental group 1: read the adaptive eBook only.

Experimental group 2: read the adaptive eBook with dialogic reading training.



Graph 1 “Number of Times the eBook was Read”

- This graph shows a group of 24 participants who finished their two-week reading requirements.
- The orange line represents a baseline of 8 because this is how many times, we asked the parents and children to read the book.
- The highest times a participant read a book was 30 and the lowest was only 1.
- Overall parents and children tend to read around or above baseline.

Graph 2 “Percent correct”

- This graph shows a group of 30 participants. This was the total amount of people who interacted with the eBook at least once.
- This graph shows the percent correct for participants who read 8 or above the baseline and the percent correct for participants who read below the baseline of 8.
- Overall, the percent correct seems to go down the more participants read the eBook.

Discussion

- Children seem to be reading the eBook at or above the baseline of 8 times, which could mean that children are enjoying the eBooks.
- Post parent surveys also support that children are enjoying the eBooks.
- Children who read at or above our requested eight reading sessions had fewer correct responses than children who read below our requested number of reading sessions.
- This could mean that children who scored very high in their initial session were less interested in continuing to read the eBooks.
- This could also mean that children who read across more sessions were more likely to experience more challenging complexity items, resulting in lower accuracy.
- Virtual data collection continuing through Spring 2021.