

Numeracy Learning Through the Canadian TOYBOX Intervention Project

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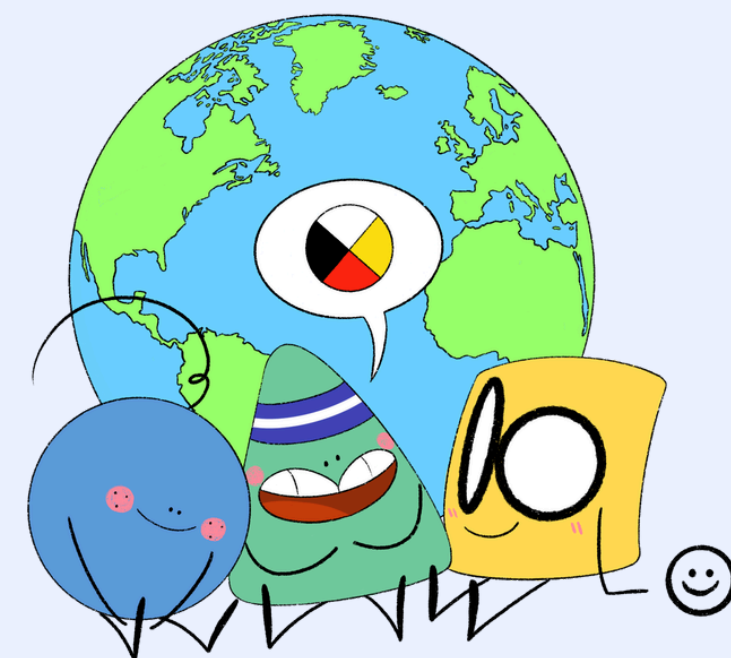


Introduction

- **TOYBOX** provides free research/curriculum based activities to support literacy, numeracy and wellness development in children aged 2-8 years.
- **WHY?** Children exposed to early learning/wellness activities develop solid foundations for school and life success.
- Early numeracy skills predict academic success.
- Home numeracy activities based in play affect math attitudes and performance.

Does TOYBOX work in teaching children critical skills?

Hypothesis: Children will improve in counting, cardinality, and number identification after exposure to TOYBOX activities.



Methods

- Eight Early Childhood Education Centres in Manitoba
- 113 children, ages 2-6 years
- N=83 included in analysis

• Counting
• Cardinality
• Number Identification



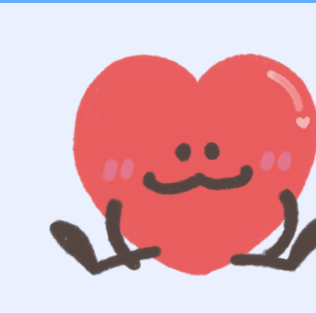
Literacy



Numeracy



Wellness



Control

5 Weeks of TOYBOX Activities

Week 1: Bingo

Week 2: Bowling

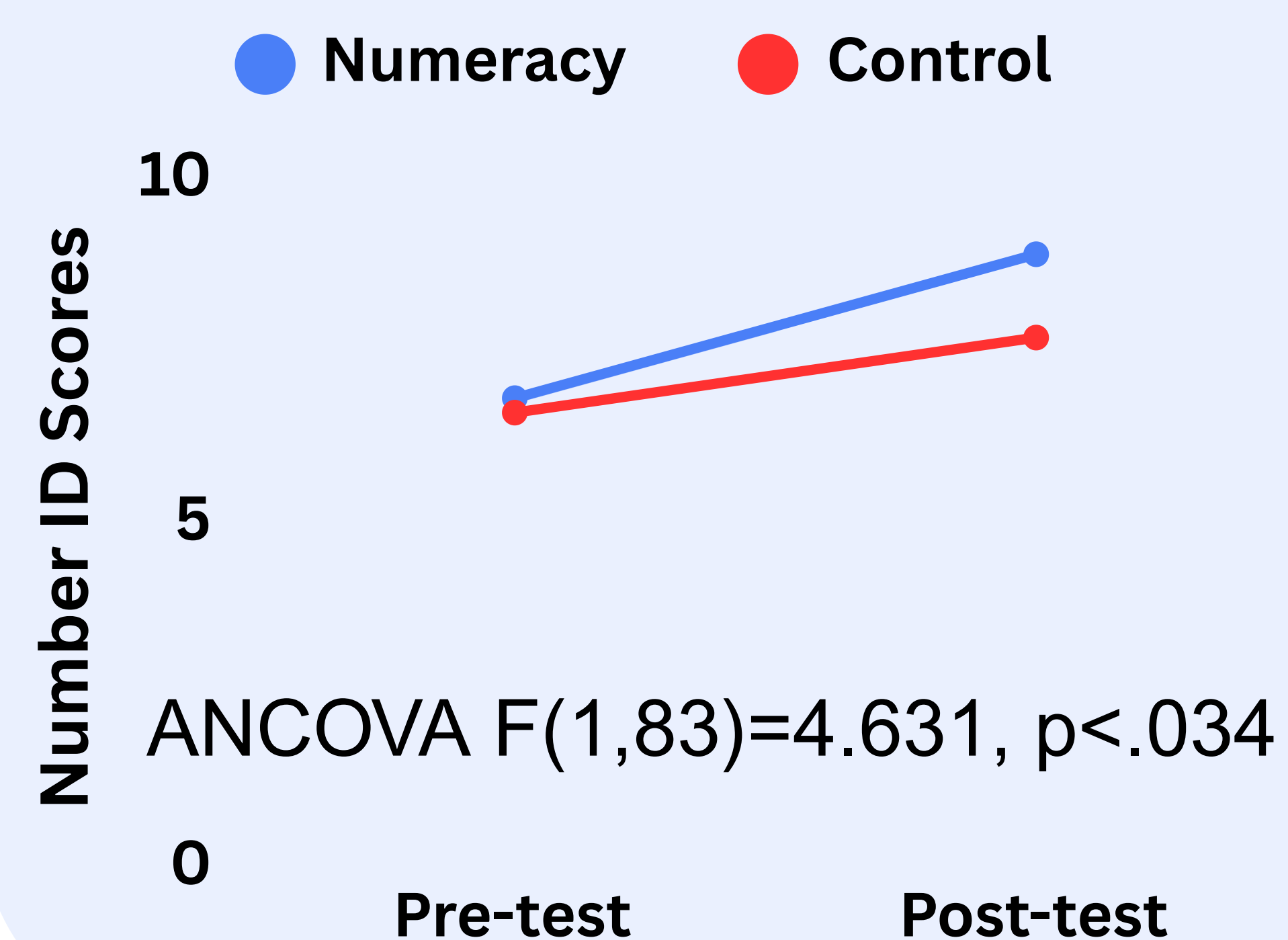
Week 3: Line Jumping

Week 4: Soup Activity

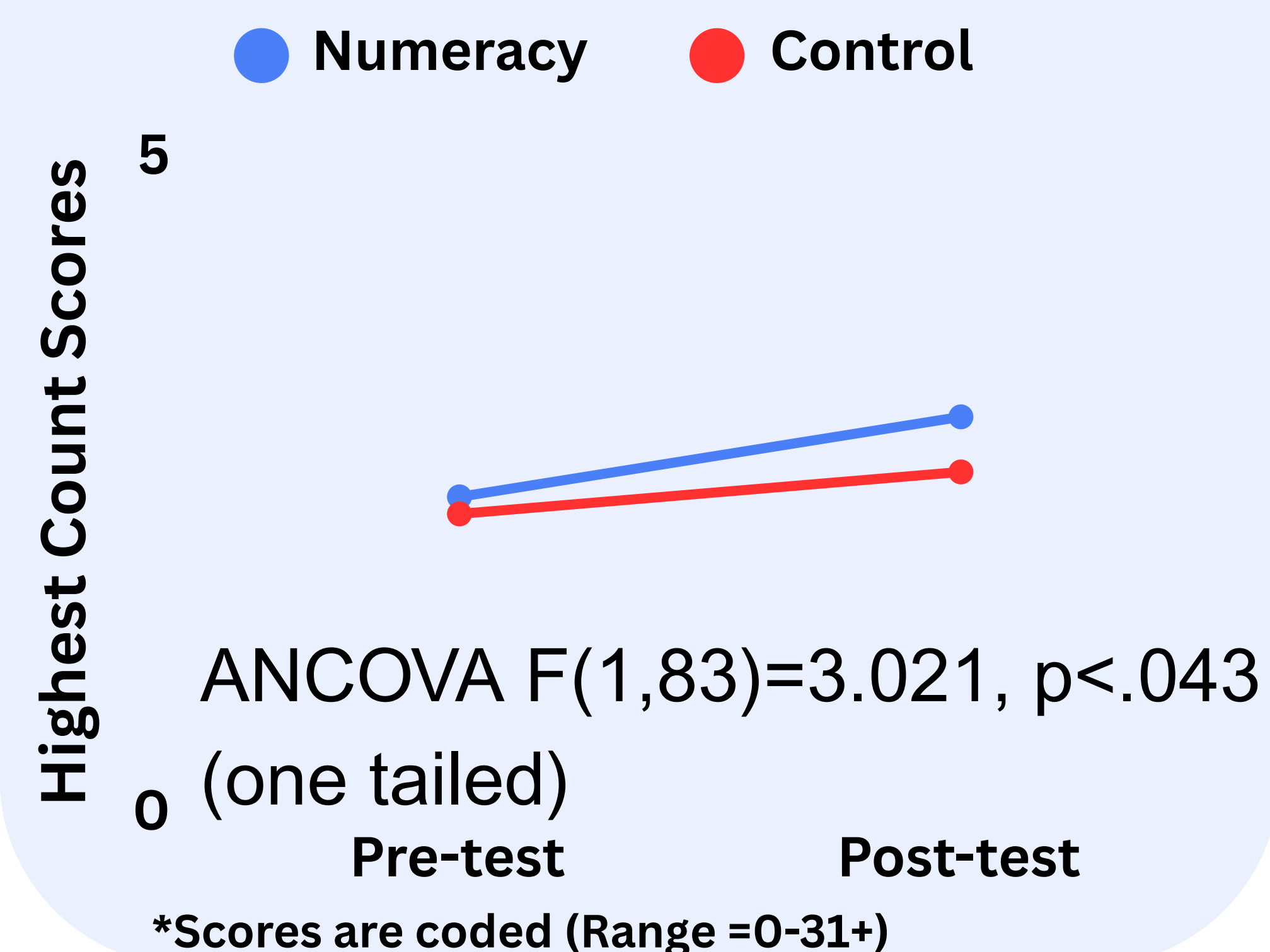
Week 5: Find and Hunt Activity



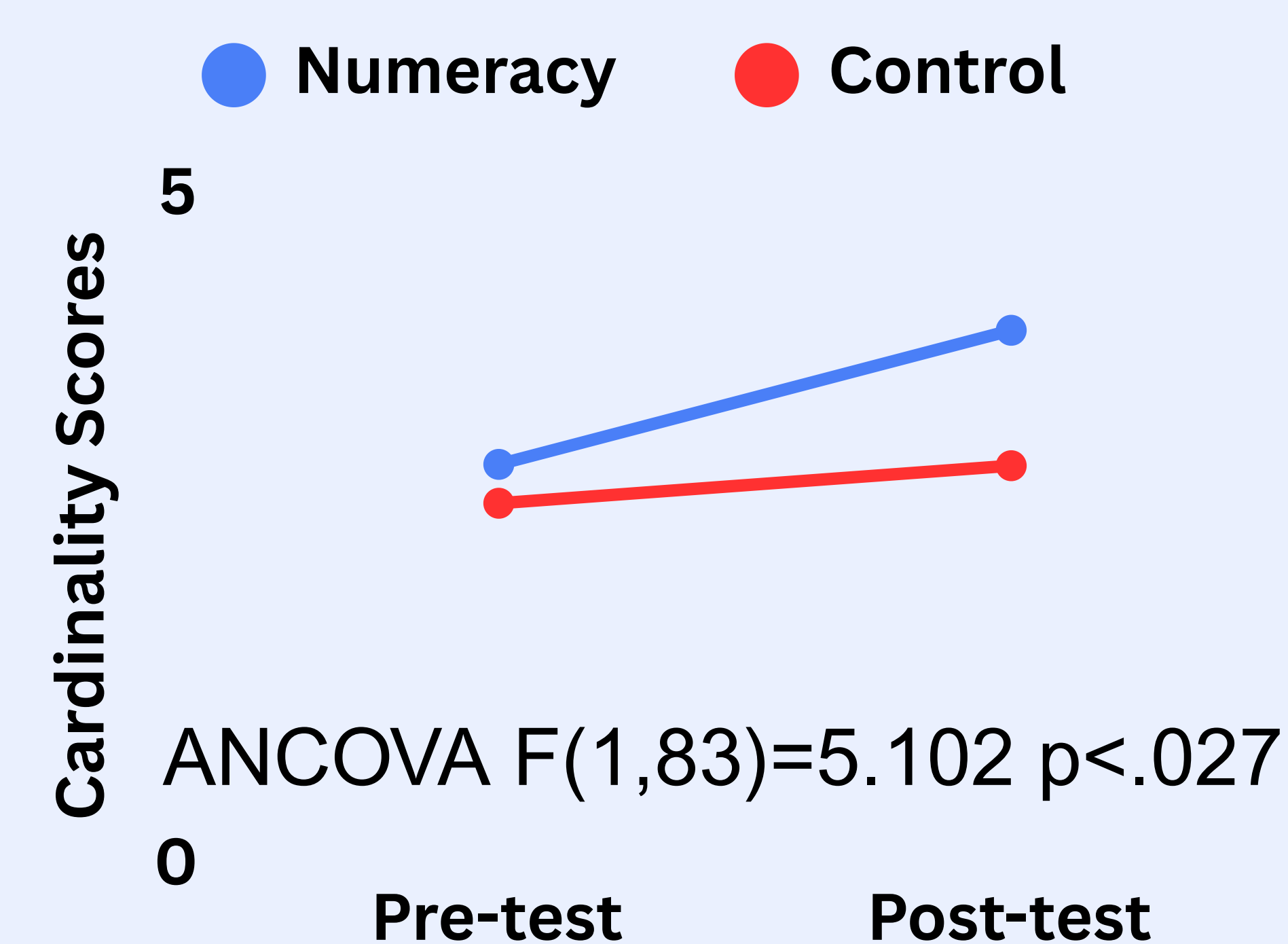
Number Identification



Highest Count



Cardinality



Discussion

- Children in numeracy condition improved on **Number ID, Highest Count** and **Cardinality** compared to controls
- No effects for Counting up to 5 (too easy), and PENS (too robust)
- Research measures showed more improvement than standardized test assessment
- Relaxed, play-based, non-scripted methodology at the child's level and interest worked to improve scores

References available on request

Next Steps...

1. **Recruitment** to improve sample size
2. **Analyze** observation notes
3. **Train** Early Childhood Educators who work directly with children on TOYBOX activities



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