



Preschool Children's Learning and Motivation in Game-Based Contexts

Benjamin C. Morris¹ & Jennifer Henderlong Corpus²

¹University of Cambridge, Cambridge, UK; ²Reed College, Portland, OR, USA



INTRODUCTION

Preschool children may learn more from play-based learning experiences, especially **guided play** (Fisher et al., 2013).

Game and fantasy contexts are also **motivating** (Cordova & Lepper, 1996).

Game-based interventions can improve young children's quantitative skills (e.g., Ramani & Siegler, 2011).

The question: Are purely game-based contexts able to produce benefits for learning and motivation or are fantasy-based elements needed?

Game Elements: rules, goals, competition, uncertainty.

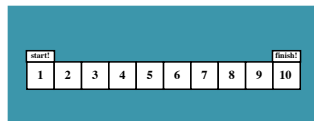
Fantasy Elements: non-literal settings, characters, stories.

METHOD: Conditions

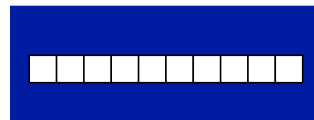
Embellished Game



Unembellished Game

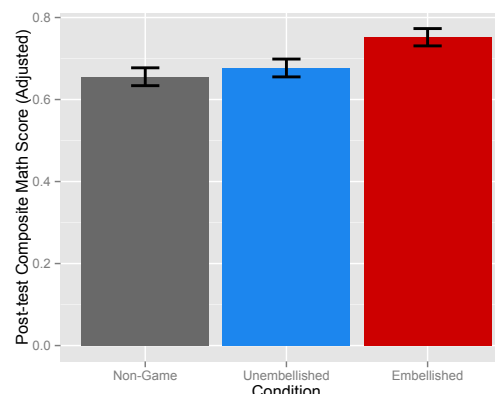


Non-Game Control



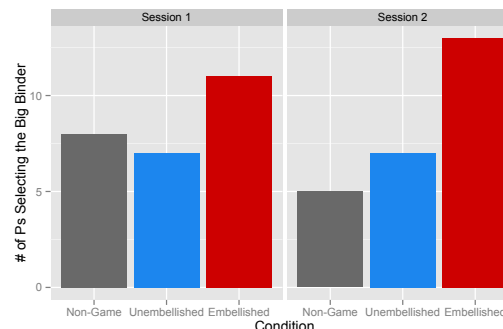
RESULTS

Figure 1. Effect of Condition on Learning



ANCOVAs revealed significant learning benefits for the embellished condition relative to both other conditions ($F(2, 48) = 5.62, p < 0.01$), across all performance measures with the exception of the number line task.

Figure 2. Effect of Condition on Motivation



Motivational outcomes differed significantly by condition only at Session 2 ($\chi^2(2, N = 52) = 6.90, p < 0.05$).

CONCLUSION

The inclusion of minor fantasy elements significantly improves learning and motivation.

Game contexts may not be beneficial for young learners without fantasy embellishments.

The relationship between learning and motivation remains unclear in this investigation.

The current study was limited by a relatively small sample size, the possibility of confirmation effects, and non-normally distributed motivational measures.

Future research should contrast specific elements of fantasy contexts, as well as compare different fantasy contexts (e.g., real-world versus fantastical).

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CONTACT

If you have questions or would like to request more information from the authors, please contact bmorris@alumni.reed.edu

METHOD

Participants: 53 Preschool Children, 26 = male, $M_{age} = 4.65$

Procedure: The training took place across 2 sessions, about 1 week apart. Children were randomly assigned to one of three conditions aimed at inculcating a linear representation of numbers. The two game-based conditions involved a total of about 30 minutes of board game play with counting (adapted from Ramani & Siegler, 2011). The control task involved engaging in non-game, numerical activities.

