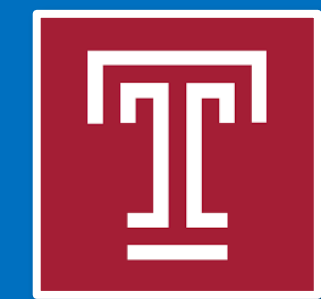


# Time to go on a space adventure!

## Using digital games to support early vocabulary learning

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### Background

- Although many apps for children are marketed as educational, little research exists testing their effectiveness (Vaala et al., 2015).
- Objective:** Test whether preschoolers can learn new vocabulary words from a narrative-based digital game.

### Method

#### Digital Game

- 10 target words were selected to be difficult for this age group.
- Each word has three **learning moments** throughout the game.

#### Learning Moment #1: Defining word



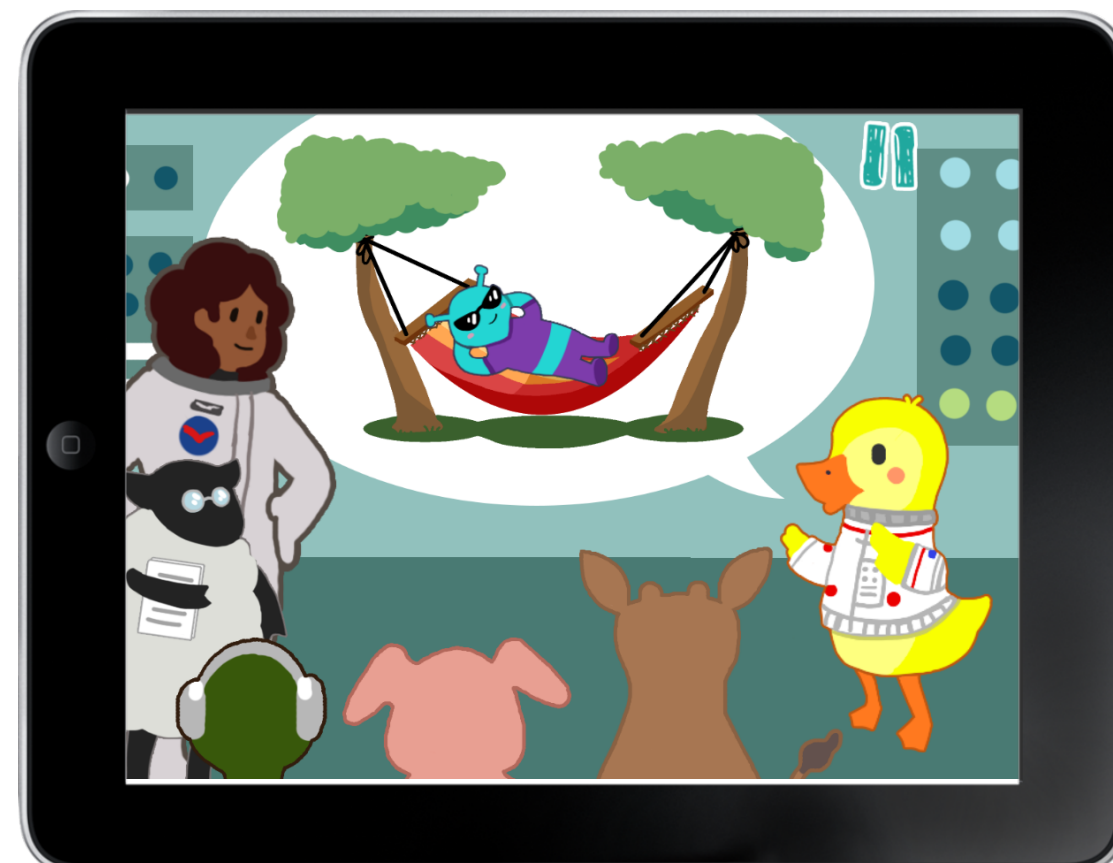
"One afternoon, you were relaxing in your backyard on a **hammock**. A **hammock** is a bed made of cloth or rope that you can hang between two trees. Can you say **hammock**?"

#### Learning Moment #2: Task using word meaning



Find the alien laying on her **hammock**. She'll have a fuel nozzle for you!

#### Learning Moment #3: Review in context



Now you have to report on your mission! First, we found an old lady lying in a **hammock** who gave us a fuel nozzle.

Created in collaboration with **SmartyPal**  
Smarter Learning. Real Impact.

#### Receptive Vocabulary



Awning



Score is # of words correct

#### Expressive Vocabulary

"What does **awning** mean?"

Responses coded for information units such as describing a feature, giving a synonym, using in context

Score is total # of information units generated

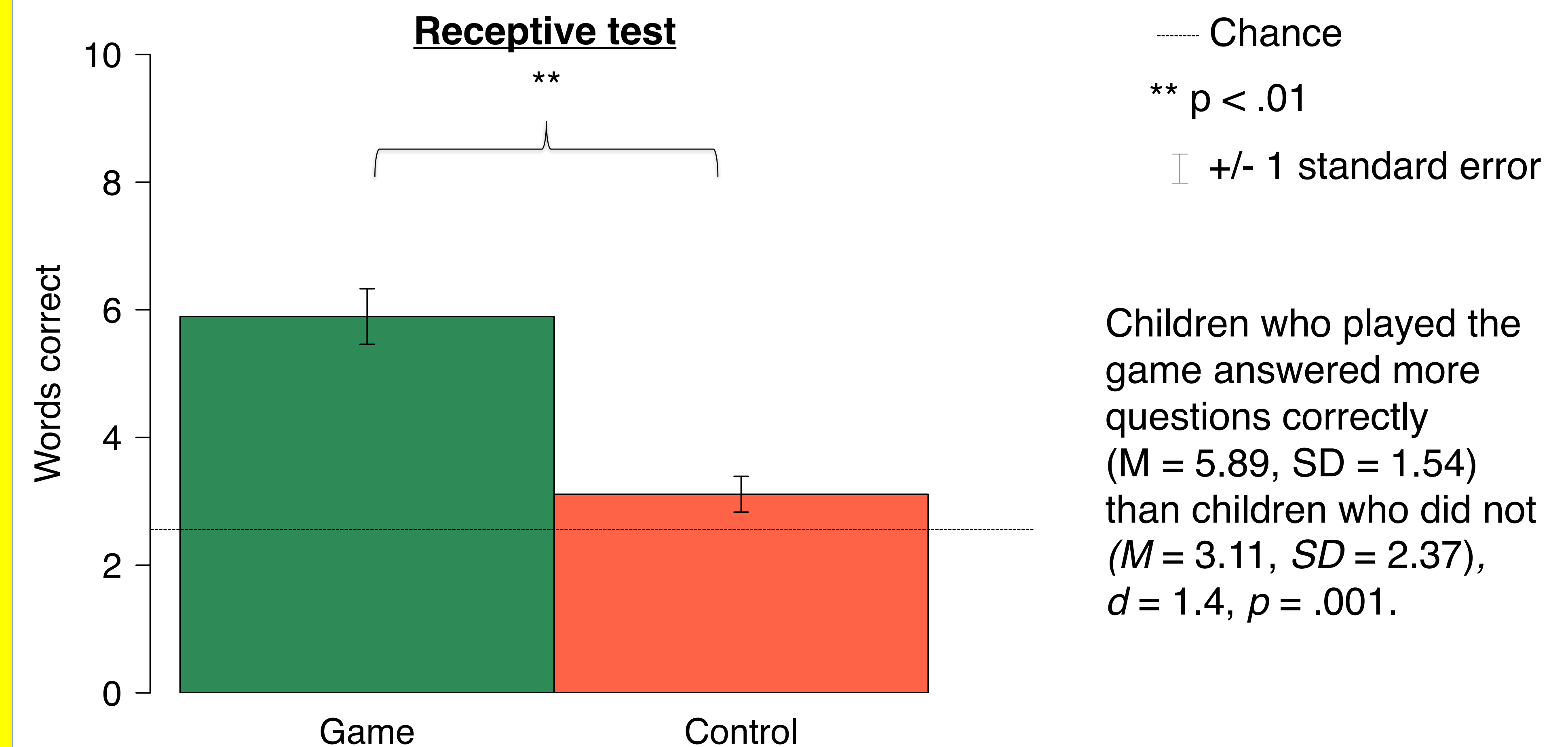
### Study 1: Method

- Middle-SES 4-year-olds played the game in lab (N = 19); a control group (N = 10) had no exposure to the game; immediate test of receptive vocabulary knowledge

### Study 2: Method

- Participants: 3- and 4-year-olds (N = 33) in a Head Start preschool in Philadelphia & in a low-income preschool in Nashville
- Children played the game four times over four weeks as part of a larger intervention.
- At pretest and posttest, children completed receptive and expressive vocabulary measures for words taught in the game and for five non-exposure control words.

### Study 1: Results



### Study 2: Results



### Discussion

- Both middle-SES children in the lab and low-SES children in the classroom learned new vocabulary from an interactive tablet game.
- These findings suggest that developmentally-appropriate digital games show promise for vocabulary learning during early childhood, especially when parents and teachers are not available.
- Future studies will compare learning to a control group who also has exposure to words.

### Acknowledgements

This research was supported by Institute of Education Sciences Grant #R305A150435 and Institute of Education Sciences training grant #R305B130012. Special thanks to SmartyPal, especially Prasanna Krishnan, Lakshmi Sudarsan, Kirsten St. Peter, and Brian Verdine. Thank you to the administrators, teachers, parents, and children at the Acelero Learning in Philadelphia and the Nashville Public Schools, as well as the parents and children who participated in the lab. We thank members of the Temple Infant and Child Lab, the UD Child's Play Learning and Development Lab, and David Dickinson's lab at Vanderbilt University for their assistance in data collection and coding.