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YOUNG CHILDREN'S INTEREST, ENGAGEMENT LEVEL, AND SCIENCE VOCABULARY KNOWLEDGE

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Abstract

Problems

Early vocabulary knowledge, especially academic vocabulary, is one of the important foundational skills that predict later school achievement and success (Hirsch, 2003; Marulis & Neuman, 2010). According to the previous research, there exists a substantial variability in children's vocabulary knowledge, with a lack of skills among children from low-SES families or families with low-level stimulation and interactions (Hart & Risley, 1995; Hoff, 2003). This gap is concerning given that the variability appears early and continues throughout the child's education journey (Hart & Risley, 1995; Hirsch, 2003; Marulis & Neuman, 2010).

The vocabulary gap for science terms is particularly interesting due to the challenge children face learning them. Science vocabulary is not a part of everyday language and needs specific instruction or inputs (i.e., science book reading), which does not occur often for at-risk children. The growth of vocabulary knowledge occurs incrementally and slowly, requiring multiple exposures to the words (Hirsch, 2003).

Another aspect of vocabulary learning that is focused on in our study is the role child interest and engagement level have on developing academic vocabulary knowledge. Topic interest is vital for comprehension, attention, text recall, and overall deeper processing of texts

(Hidi, 2001). Past research has shown that a child's interest and engagement level have a strong influence on the quality of learning.

Research Question

The goal of our study is to understand the differences in science vocabulary knowledge and determine a predictor of science vocabulary knowledge in birds in young children. Our research question is the associations between children's science interest and science vocabulary knowledge. We hypothesized the children's vocabulary knowledge can be predicted by children's interest level in the topic.

Method

Our study consists of 51 preschool and kindergarten students, aged 3 to 6, from a private early childhood education center in the Greater Salt Lake Areas. The current study is a part of a larger study to examine the impact of science vocabulary intervention related to birds. The current sample includes 26 girls and 25 boys; all children speak English fluently. Children's general vocabulary skills were assessed with Peabody Picture Vocabulary Test 5th Edition (PPVT-5; Dunn, 2019), a standardized receptive vocabulary assessment. Children's academic vocabulary related to birds was assessed by a 19-item bird receptive vocabulary test (Son & Dibble, 2020). Finally, children's interest in birds was measured by a bird engagement survey including items on children's prior knowledge, experiences, and interest in birds.

Results

Pearson's correlational analyses showed that children's interest in birds was not associated with children's vocabulary knowledge in birds. Children's interest in birds and their bird vocabulary knowledge were not associated with PPVT scores. However, there was a gender

difference. Analysis of boys' data showed higher bird vocabulary knowledge, $r\,(25) = .423$, $p = <.005$. For girls, bird interest and bird vocabulary knowledge were not correlated.

Conclusion

The goal of our research is to determine the best vocabulary intervention program to successfully bridge the gap between middle to upper SES children and children from lower SES backgrounds. This gap does not improve but rather increases as children progress in school years and impacts school achievement (Hirsch, 2003; Marulis & Neuman, 2010). We hope to find a way to not only improve vocabulary knowledge but also create a learning condition that will accelerate vocabulary learning. Our findings have the potential to lead to the creation of improved vocabulary intervention programs that focus on at-risk children. This research will add to psychological science by broadening the literature on the role of child interest and engagement levels and how these components impact vocabulary learning.

References

Dunn, D.M. (2019). Peabody Picture Vocabulary Test (5th ed.) [Measurement instrument]. Bloomington, MN: NCS Pearson.

Hart, B., & Risley, T .R. (1995). *Meaningful differences in the everyday experience of young American children*. Paul H Brookes Publishing.

Hidi, S. (2001). Interest, readings, and learning: Theoretical and practical considerations. *Educational Psychology Review, 13(3)*, 191-209.

Hirsch, E.D. (2003). Reading comprehension requires knowledge of words and the world. *American Educator*, 10-44.

Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development, 74(5)*, 1398-1378.

Marulis, L. M., & Neuman, S. B. (2010). The effects of vocabulary intervention on young children's word learning: A meta-analysis. *Review of Educational Research, 80,* 300– 335. doi:10.3102/0034654310377087

Son, S.C., & Dibble, E. (2020). *Testing the quality of bird vocabulary in young children*. University of Utah.