



Investigating Help-seeking as an Active Learning Strategy in Memory Integration

Elisabeth McLane, Diana Selmecky Ph.D.

Department of Psychology, University of Colorado Colorado Springs



Introduction

- Active learning is the process of actively engaging and participating in one's own learning, rather than just passively receiving information (Freeman, et. al., 2014).
- Previous research suggests forms of active learning support students' academic achievement and memory (Freeman et al., 2014; Markant et al., 2016).
- One active learning strategy is help-seeking because it requires the learner to decide if they need help and apply the help received (Karabenick & Berger, 2013).
- There is limited research investigating the causal relationship between active help-seeking and learning benefits, specifically during memory learning tasks.

The Current Study

- The current research will examine help-seeking as an active learning strategy and whether it supports knowledge expansion and long-term retention.

Projected Findings

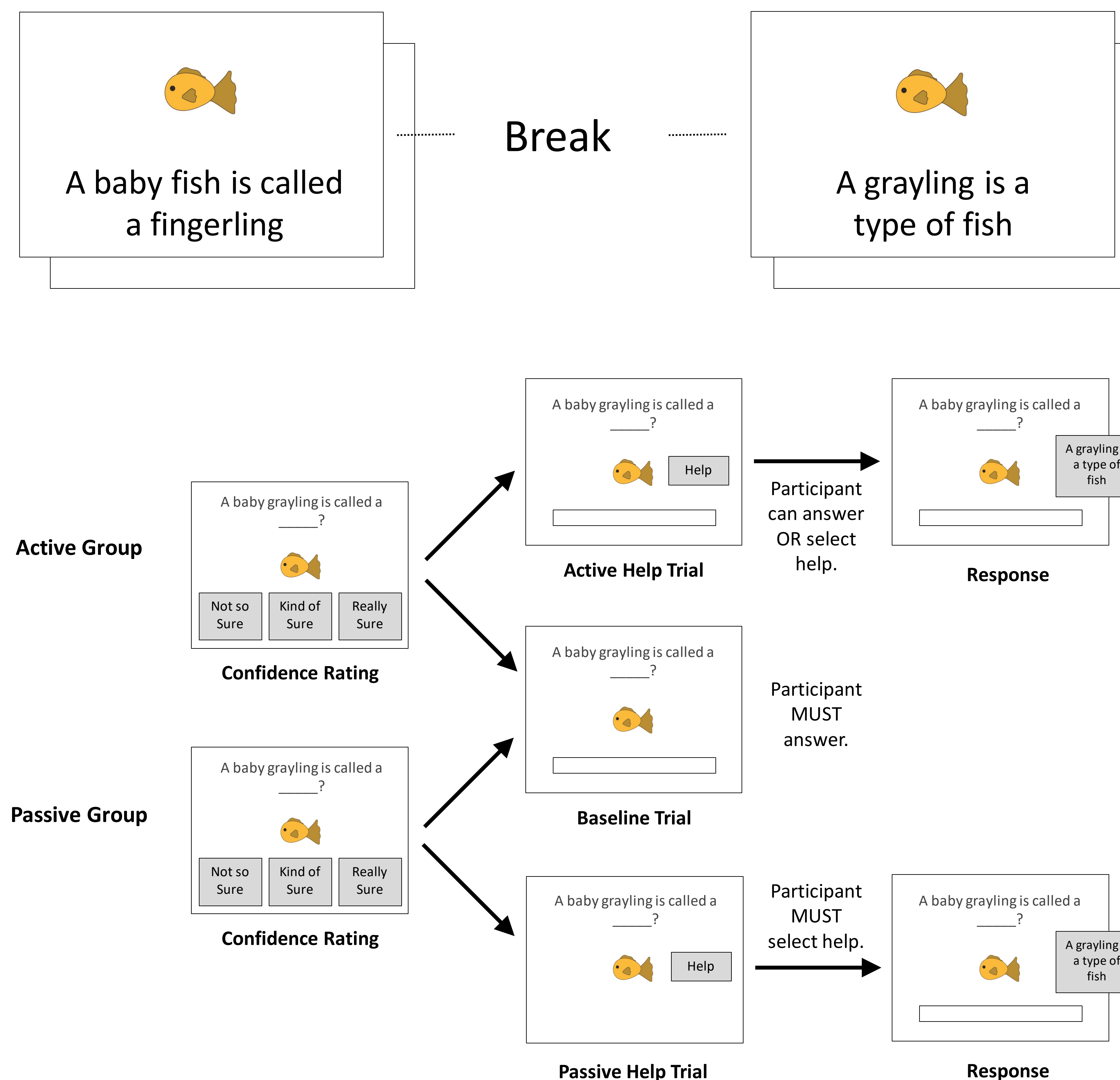
- We predict the benefit of receiving help compared to baseline conditions when no help is available will be greater when help can be actively sought compared to when help is simply given.
- Additionally, we predict students with better metacognitive accuracy will benefit the most from active help-seeking.

Acknowledgements

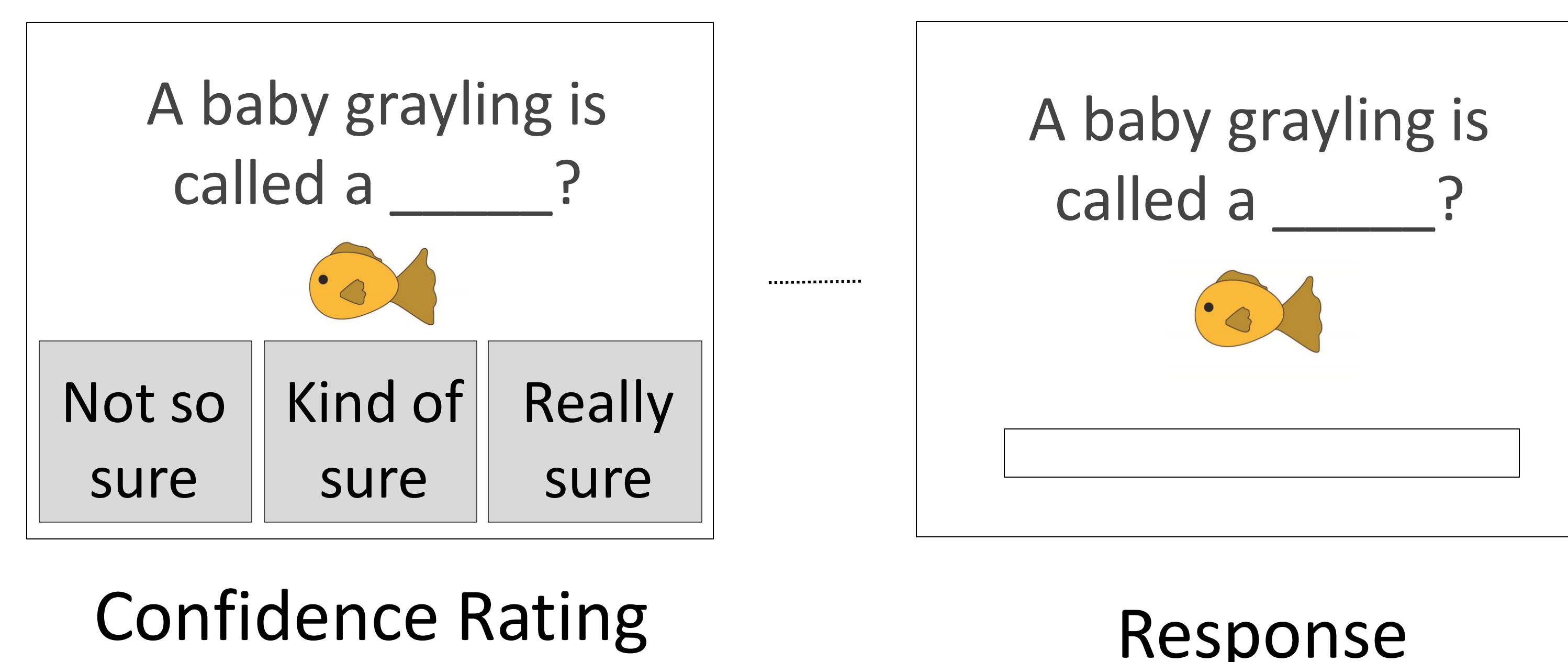
This research was supported by the UCCS Undergraduate Research Academy (URA).

Design

Day 1 Encoding & Practice Test



Day 2 Final Test



Method

Design: 2x2 mixed factorial design measuring within subject factors of trial-type (help or baseline) and between subject factors of group (active or passive).

Participants: We conducted an a-priori analysis to determine a projected sample size of ~68 college-aged participants.

Task: Participants complete a two-day online memory task.

Day 1 Encoding Phase:

- Participants encode two lists of 40 related fact pairs (80 facts total)
- Each fact is presented for 8500ms

Day 1 Practice Test:

- Participants are asked 40 derivation questions that require them to combine two of the previously learned fact pairs.
 - During baseline trials, participants must answer the question with no help.
 - During help trials, participants in the active condition are given the option to select help and participants in the passive condition are given unsolicited help based on the help-seeking decisions of a previous active participant.
- Before each question, participants are asked to rate how confident they are that they know the answer.

Day 2 Final Test:

- Participants are asked the 40 derivation questions and must answer them all without help.
- Participants report how confident they are they know the answer prior to answering.

References

- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences of the United States of America*, 111(23), 8410–8415. <https://doi.org/10.1073/pnas.1319030111>
- Karabenick, Stuart & Berger, Jean-Louis. (2013). Help seeking as a self-regulated learning strategy. *Applications of Self-regulated Learning Across Diverse Disciplines: A Tribute to Barry J. Zimmerman*. 237-261.
- Markant, D. B., Ruggeri, A., Gureckis, T. M., & Xu, F. (2016). Enhanced Memory as a Common Effect of Active Learning. *Mind, Brain, and Education*, 10(3), 142–152. <https://doi.org/10.1111/mbe.12117>