

# Classroom noise and emotions trade off with attention for learning in children



042.15 / KK16, Society for Neuroscience 2023, Washington, DC USA  
Supported in part by a Gallaudet University Priority Research Fund Award

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2. Kahneman (1973). *Attention and effort*. Prentice-Hall, Englewood Cliffs, NJ.  
3. Lane, D. M., & Pearson, D. A. (1982). The development of selective attention. *Merrill-Palmer Quarterly*.  
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## Negative emotions impact attention for learning in young school-aged children

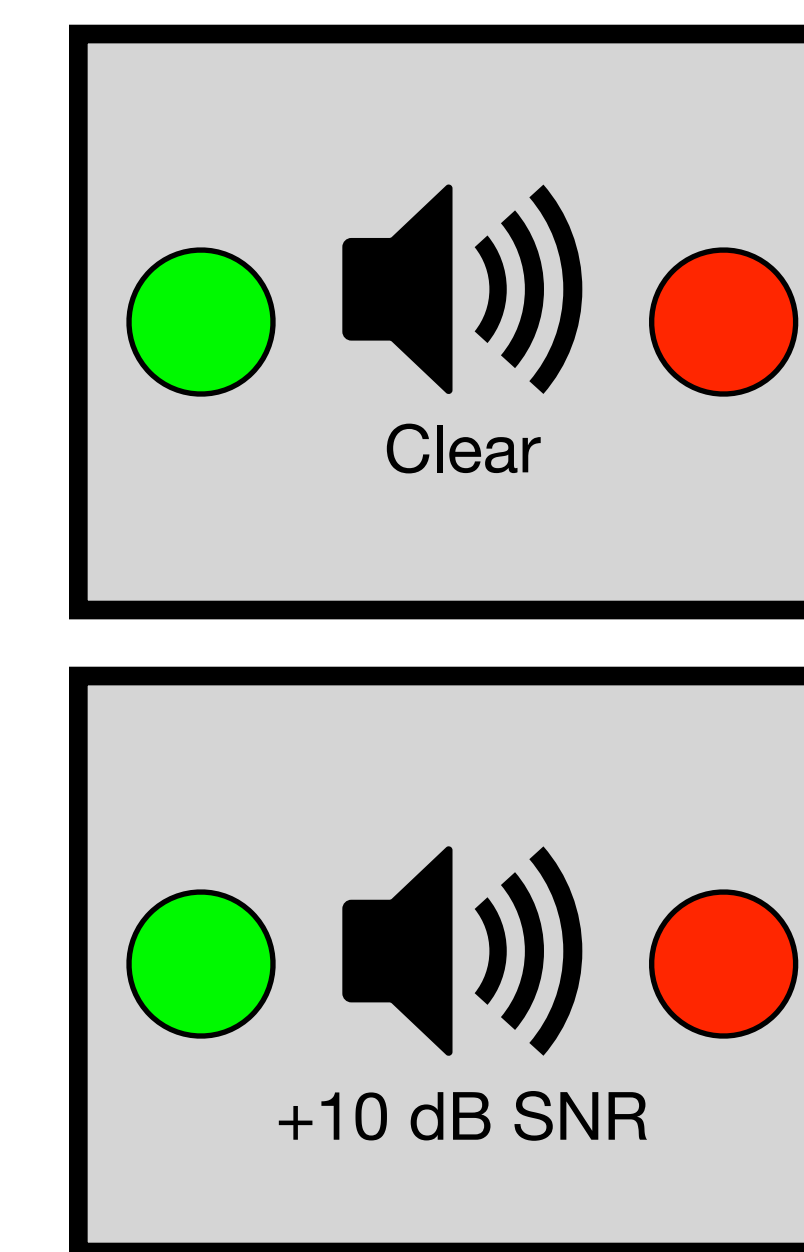
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### Introduction

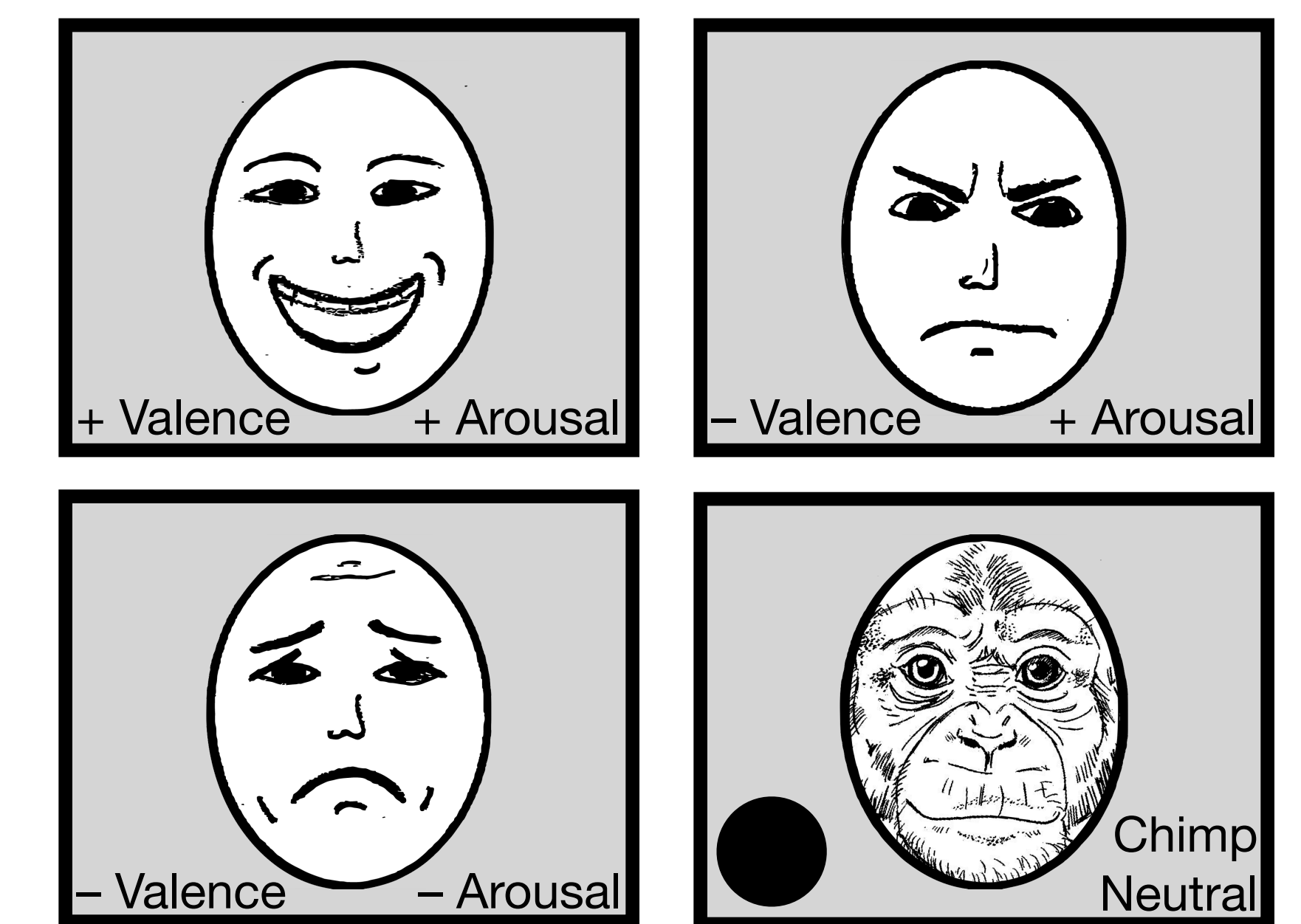
Classroom learning requires attention, but the regulation of **cognitive** and **emotional** demands on attention is a complex executive skill for young children.<sup>1</sup>

### Methods

We studied the impact of **cognitive load** and **facial affect** on attention in 3 young school-aged children across 2 time points (longitudinal, first and second grades).<sup>2</sup>



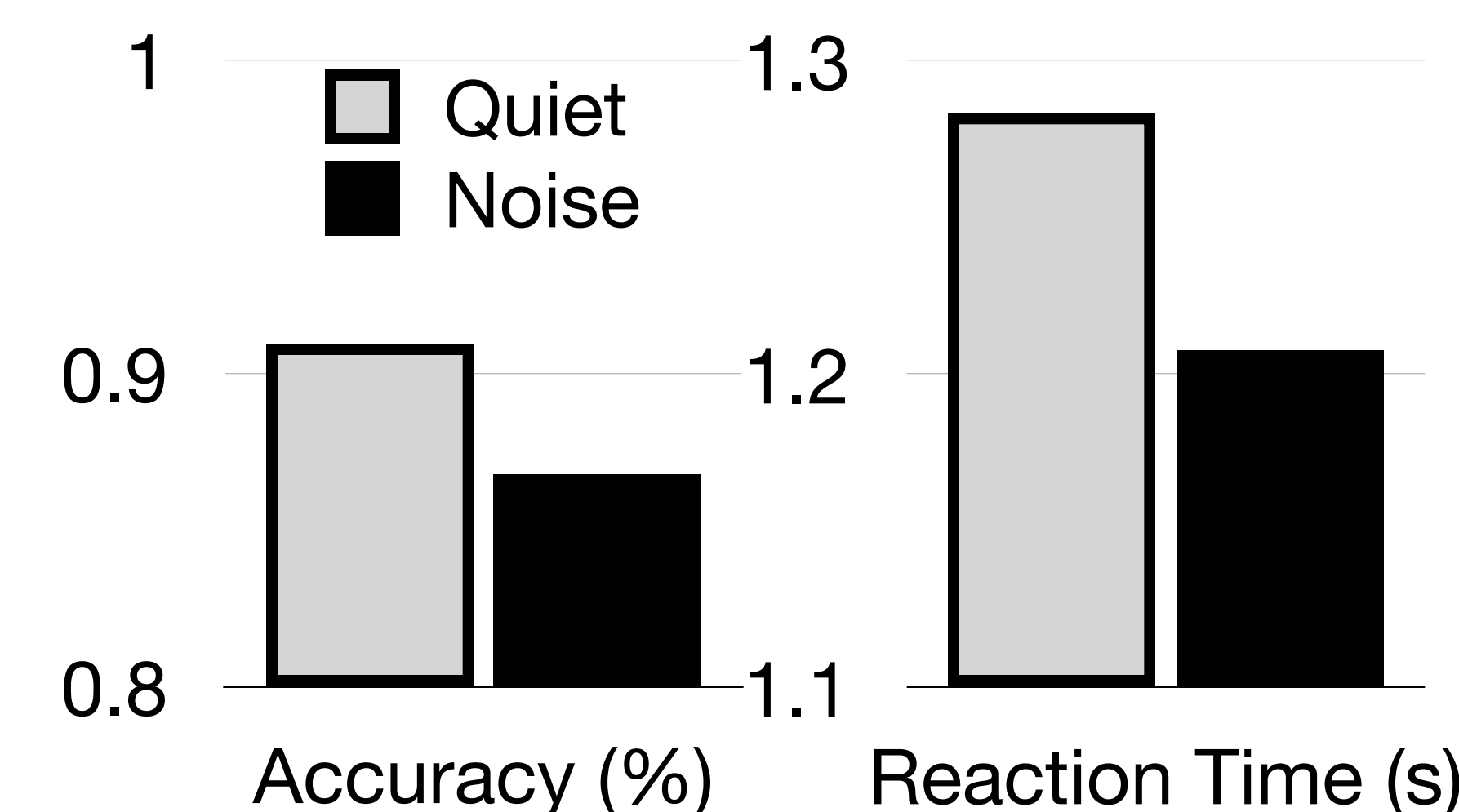
Task 1: Cognitive Load



Task 2: Facial Affect

### Results

Accuracy and reaction times were analyzed with linear mixed-effects models and tested using estimated marginal means. Both listening in noise and mirroring negative facial affect traded off with attentional executive resources.



Task 1: Cognitive Load



Task 2: Negative Affect

### Discussion

These findings suggest that early childhood attention is sensitive to changes in cognitive and emotional states.<sup>3,4</sup> Listening to speech in noise typical of **busy classrooms can increase cognitive load** and trade off with attention flexibility across grade levels. Likewise, **negative affect in classrooms can slow attention** processing for all children, even across development of these emotional states.