

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



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Negative emotions impact attention for learning in young school-aged children

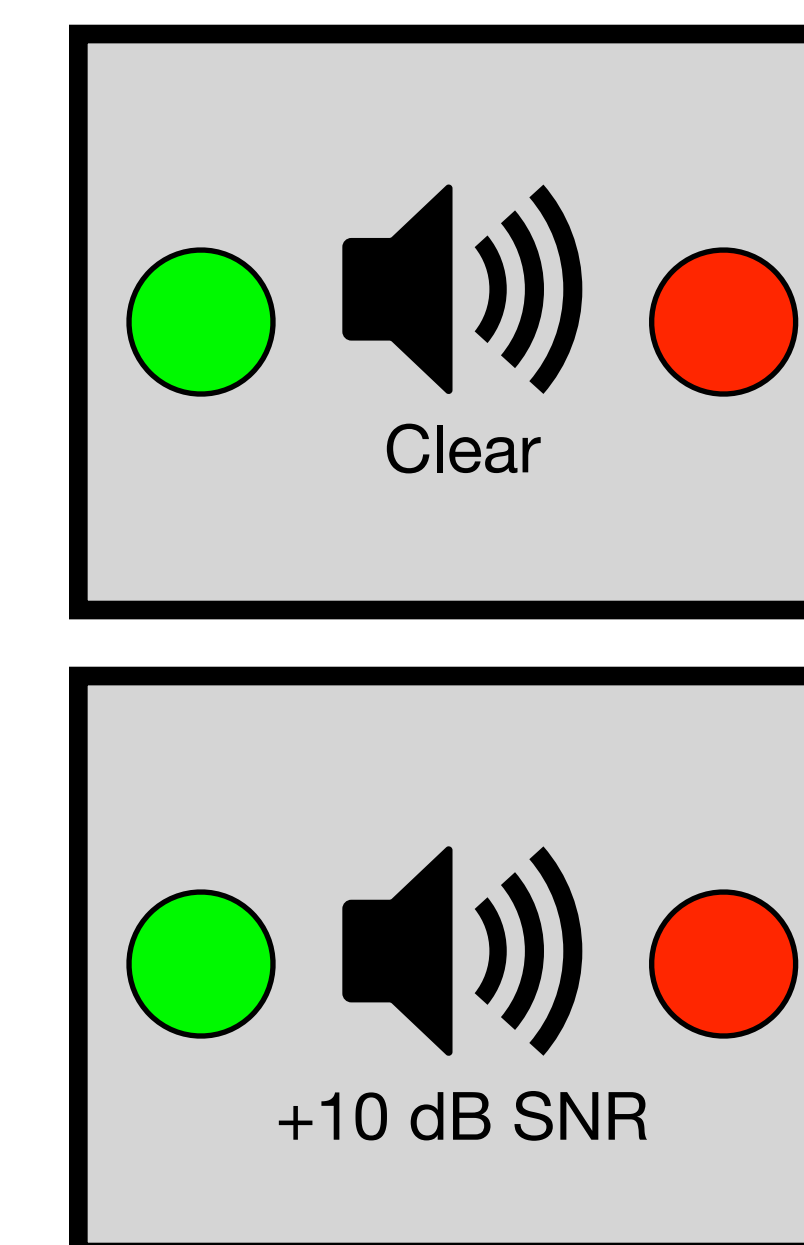
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Introduction

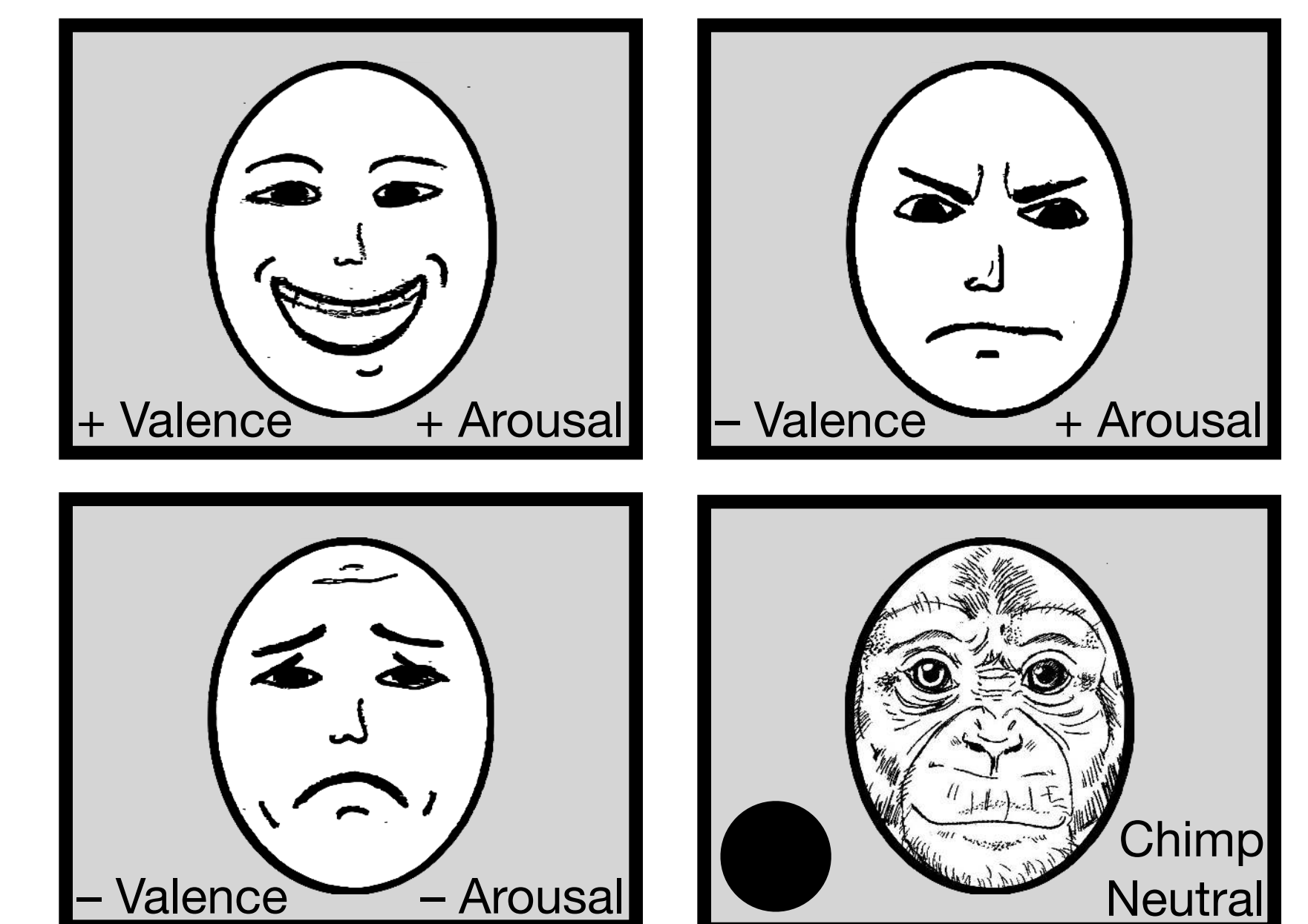
Classroom learning requires attention, but the regulation of **cognitive** and **emotional** demands on attention is a complex executive skill for young children.¹

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).²



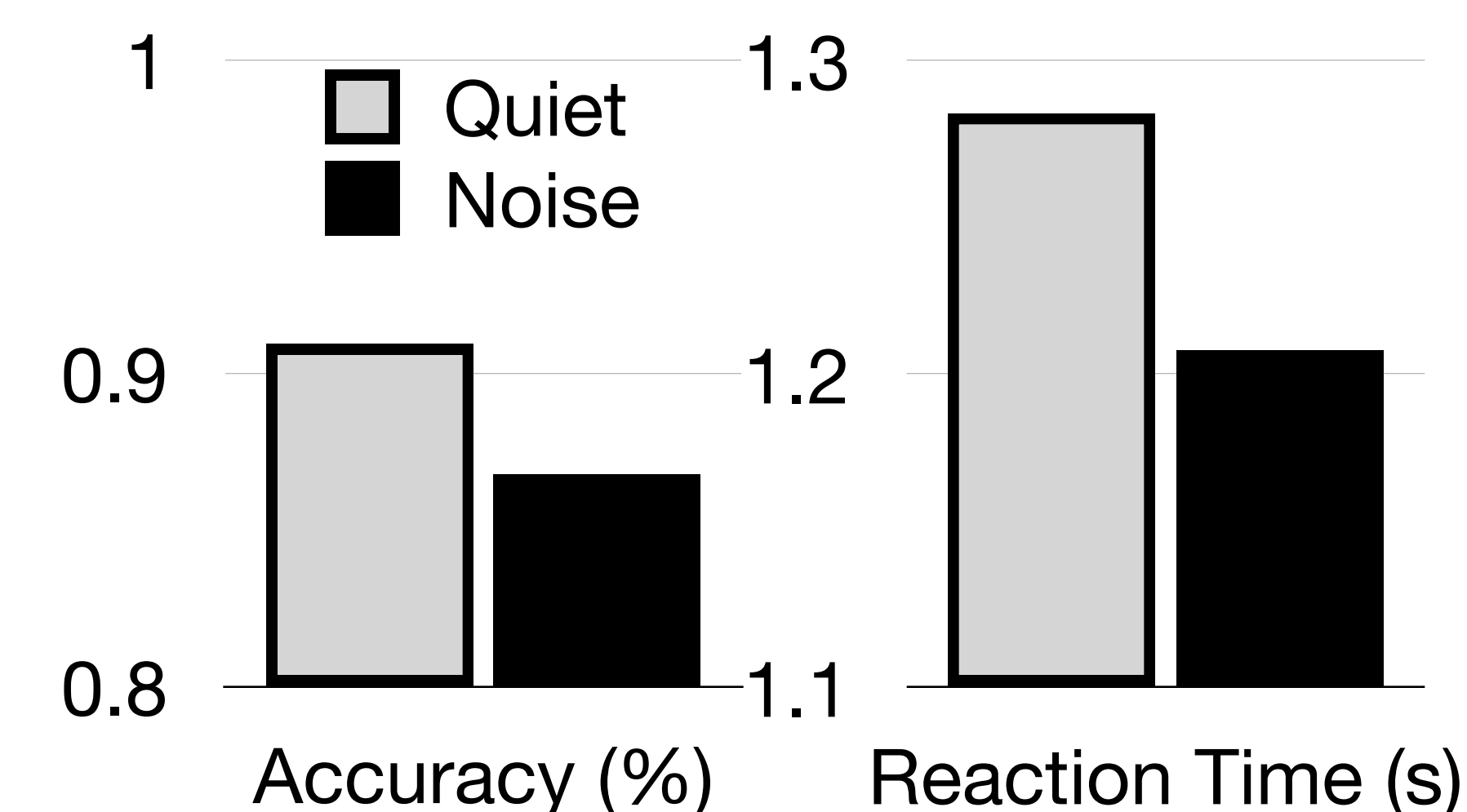
Task 1: Cognitive Load



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: Facial Affect

Discussion

These findings suggest that early childhood attention is sensitive to changes in cognitive and emotional states.^{3,4} 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.

1. Hagen & Hale (1973). The development of attention in children. *ETS Research Bulletin Series*.
2. Kahneman (1973). *Attention and effort*. Prentice-Hall, Englewood Cliffs, NJ.
3. Lane & Pearson (1982). The development of selective attention. *Merrill-Palmer Quarterly*.
4. von Salisch, Haenel, & Freund (2013). Emotion understanding and cognitive abilities in young children. *Learning and Individual Differences*.