

Development and Validation of a Personalized EEG-Based Emotion Elicitation Workflow: A Pilot Study

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Abstract:

Emotion plays a fundamental role in communication, social interaction, learning, and overall quality of life. However, traditional approaches for assessing emotional responses often rely on verbal reports, questionnaires, or standardized stimuli that may not fully capture an individual's true emotional experience. These limitations can be particularly challenging when working with children and individuals with communication disorders, who may experience difficulties expressing emotions through conventional assessment methods. Consequently, there is a growing need for personalized and accessible approaches that can better reflect individual emotional experiences while providing objective measures of emotional engagement. This pilot feasibility study evaluated the development and implementation of a personalized electroencephalography (EEG)-based emotion elicitation workflow designed to support future research involving children with communication disorders. The primary outcome of this pilot study is methodological rather than inferential. The findings demonstrate the feasibility of a personalized EEG-based emotion elicitation framework while highlighting the importance of reliable trigger synchronization for future studies. These results provide a foundation for larger-scale investigations and the future development of personalized, game-based emotion assessment tools for individuals with communication disorders.

Keywords:

EEG, emotion elicitation, personalized stimuli, communication disorders, affective neuroscience, pilot study.