The impact of positional configuration of a desk in a room on attention and creativity measured by behavioral and neurophysiological recordings

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I. EXTENDED ABSTRACT

The significant architectural features such as window, ceiling, floor, or wall likely influence on behavior and neurophysiological states of individuals. In particular, a recent study (Meyers-Levy, 2007) has shown that ceiling height evokes concepts of freedom or confinement that in turn influence relational processing or item-specific processing. However, the neurophysiological alterations depending on freedom or confinement are not examined yet. In this study, we investigated the degree of attention and creativity of 40 participants in various desk positions; sitting toward versus against a wall in the room, on condition that the surroundings provide reasonable saliency to the priming of concepts (freedom- versus confinement-related) without any additional installations (i.e. hanging lanterns from ceiling). During the task performance, we used a portable EEG device to measure EEGs in participants to determine how openness versus closeness of space influences behavioral and neurophysiological states. We demonstrate that desk position in a room affects attention and creativity and their EEG profiles are significantly different depending on the desk position. We suggest that this result potentially provide a guideline about how to configure workplace, conference room, private room and classroom in accordance to various purposes and thereby improving job performances at work or school.

Keywords: desk position, creativity, attention, openness or closeness, EEG