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Promoting schema formation among wind musicians of varying abilities

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Cognitive load theory identifies three types of cognitive load present during learning: *intrinsic*, *extrinsic*, and *germane*. To optimize learning, cognitive load theory recommends optimizing germane load. The purpose of this study was to examine the interactions among intrinsic and germane cognitive loads when practicing a wind instrument. The study will determine which of two practice strategies is most effective for three levels of learners on a woodwind instrument. Forty-five participants were university music majors and minors with either (1) no experience playing a woodwind instrument, (2) limited experience, or (3) a woodwind major or minor. In a repeated-measures design, students practiced three technical tasks in a random order (high cognitive load) and three technical tasks in a repetitive order (low cognitive load). Participants practiced on a MIDI wind controller, which is similar to a saxophone. Twenty-four hours following practice, participants completed a second study session for retention measurement. Performances were scored for pitch accuracy and speed. Within-subjects comparisons examined which level of cognitive load was most effective for each level learner. Results will be situated in prior research on cognitive load theory, and implications will be drawn for practice.

Keywords: cognitive load; practice; MIDI; wind instrument; schema

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