



Does Audio-Perceptual Training Augment the Anticipation Performance of Novices?

Poster Presentation

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Abstract

Introduction: Perceptual-cognitive skill is an important characteristic of expert sport performance. Visual information is essential to successfully anticipate the direction of the shot in ball sports, whereas using another sense in motor learning has received less attention. This study examined the effectiveness of audio-visual training for improving anticipation performance in badminton.

Methods: Forty novice students were randomly divided into two groups (visual and audio-visual). The experimental procedure included one training session and three testing phases. During the training sessions, 200 video clips were employed to anticipate the direction of the clear shot, interspersed by 5-minute of rest every 25 trials. A sound was used to orient the attention of the audio-visual group toward key points; meanwhile, the visual group watched the videos without sounds. Then, during the testing phases, they watched 20 video clips in the pretest, immediate retention, and delay retention test. The film was occluded at the racket-ball contact, and then they quickly and carefully anticipated the direction of the shot.

Results: The audio-visual group showed higher response accuracy and shorter response time than the visual group in the immediate and delayed retention.

Conclusion: In conclusion, using multisensory learning may not only reallocate perceptual and cognitive workload but also could reduce distraction since, unlike visual perception, auditory perception requires neither specific athlete orientation nor a focus of attention. In general, the use of the multisensory learning is likely to be effective in learning complex motor tasks, facilitating the discovery of the new task needs and helping to perceive the exercise structure.

Keywords

Accuracy; Response Time; Perception; Sonification

Reference:

1. Williams, Jackson. (2019). Anticipation in sport: Fifty years on, what have we learned and what research still needs to be undertaken? *Psychology of Sport and Exercise*. 42:16-24.
2. Sigrist R, Rauter G, Marchal-Crespo L, Riener R, Wolf P. (2015). Sonification and haptic feedback in addition to visual feedback enhances complex motor task learning. *Experimental brain research*. 233(3):909-25.
3. Hildebrandt A, Cañal-Bruland R. (2021). Effects of auditory feedback on gait behavior, gaze patterns and outcome performance in long jumping. *Human Movement Science*. 78:102827.
4. Hagemann N, Strauss B, Cañal-Bruland R. (2006). Training perceptual skill by orienting visual attention. *Journal of sport and exercise psychology*. 28(2):143-58.