

THE EFFECT OF PETTLEP-BASED IMAGERY ON STRENGTH PERFORMANCE

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Neuroscience researchers have found that imaged and actual performance of motor skills share common neurophysiological mechanisms, a phenomenon termed 'functional equivalence' (Decety, 1996). Holmes and Collins (2001) developed the PETTLEP model of imagery based on these findings. PETTLEP is an acronym, with each letter standing for a guideline aimed at producing functionally equivalent imagery interventions. These are Physical, Environment, Task, Timing, Learning, Emotion and Perspective. The aim of this study was to test the model with a strength task. 50 participants were assigned to five groups: PETTLEP imagery, 'traditional' imagery, physical practice, PETTLEP imagery combined with physical practice (PETTLEP combination) and control. Pre- and post-tests consisted of one repetition maximum (1 R.M) tests on the Cybex bicep curl machine. The PETTLEP group attended the gym, sat at the bicep curl machine and imaged completing two sets, whilst watching an internal perspective video of themselves performing a set of biceps curls. The 'traditional' imagery group completed two sets of their imagery at home, in a relaxed position, with eyes closed. The physical practice group physically performed two sets of the task to volitional fatigue. The combination group physically performed one set and imaged another set. Each intervention was completed twice per week for six weeks.

A group x test ANOVA revealed no pre-test differences between the groups, $F(4,44) = .33, p > .05$, but there were significant post-test between-group differences, $F(4, 44) = 12.60, p < .01$. Tukey HSD tests revealed that the PETTLEP imagery, PETTLEP combination and physical practice groups improved significantly from pre-test to post-test ($p < .01$) whereas the traditional imagery and control groups did not ($p > .05$). The PETTLEP combination group also improved to a significantly greater degree than the PETTLEP group and marginally more than the physical practice group. There was no significant difference in the magnitude of improvement shown by the PETTLEP imagery group and physical practice groups ($p > .05$).

These results strongly support the use of PETTLEP-based imagery in enhancing strength performance. This contrasts vividly with much previous research, which showed imagery to be relatively ineffective at improving performance of strength-based tasks. However, previous research has often used more traditional 'visualisation' imagery techniques. Therefore, sports psychologists should use the PETTLEP model in order to maximise the functional equivalence of their imagery interventions and have the greatest positive effect on performance of strength tasks.

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Holmes, P.S. & Collins, D.J. (2001) The PETTLEP Approach to Motor Imagery: A Functional Equivalence Model

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Keywords: Mental Training, Applied Sport Psychology, Strength