

Peak Performance

Peak performance or the "superior use of human potential" (Harmison, 2006, p. 233) is described not only as the athlete's uppermost limits of functioning (personal best) but also the concurrent experience/state of flow (Krane & Williams, 2010). Developing awareness in an athlete is important because it allows the athlete to monitor his/her arousal level, maintain control and attentional focus in order to produce the best possible performance (Ravizza, 2010). Awareness and attention are important to resource allocation (e.g. energy, pacing, regulation) and executive functions both of which contribute to an "effortless" performance, paradox of control, and other elements of flow state. Two subtypes of attentional focus are external (focus on the effects of one's movements/effort) and internal (focus on one's body's movements/effort) (Becker & Smith, 2015). Research has indicated that each subtype has its own merit.

Becker and Smith (2015) compared the effects of broad internal focus (BI, focus on general body movements), narrow internal focus (NI, focus on specific movements about 1 joint), and external focus (EX) on performance in a group of volunteer standing long jumpers (N=68, 40 males, 28 females, 18-20 years old). The long-jumpers were randomly assigned a group: BI, NI, EX, or control (Becker & Smith, 2015). After a 5-minute warm-up, the long-jumpers attempted 5 maximal standing long jumps (distance was dependent variable) (Becker & Smith, 2015). Prior to jumping, the jumpers were given a verbal cue respective of their experimental group (except for the control group) to induce a particular type of focus (Becker & Smith, 2015).

The verbal cue for the BI group was, "When attempting to jump as far as possible, focus on using your legs" (Becker & Smith, 2015, p. 1781). The verbal cue for the NI was, "When attempting to jump as far as possible, focus on extending your knees as rapidly as possible" (Becker & Smith, 2015, p. 1781). The verbal cue for the EX group was, "When attempting to jump as far as possible, focus on jumping as far past the start line as possible" (Becker & Smith, 2015, p. 1781). The control group was just told to jump.

Becker and Smith (2015) found that the jumpers with EX focus jumped significantly farther than the both the BI and NI focus groups. However, there was no significant performance difference between the BI and NI groups (Becker & Smith, 2015). Becker and Smith (2015) noted that external attentional focus may be more relevant to performance than internal attentional focus (which may be good for the learning phases as opposed to performance).

Previous studies have reported internal attentional focus to result in slower swimming times, reduced running economy, and poorer results in aiming/throwing/shooting activities (Schücker, Knopf, Strauss, & Hagemann, 2014). One theory about why internal attentional focus might result in decreased performance is that the athlete may already be in the autonomous phase of learning with the automaticity in motor skills. By coaching internal attentional focus, the athlete is in essence regressing their motor learning back to the cognitive-associative phases by directing all that conscious attention on how the body should execute the skill (Schücker et al., 2014).

In Schücker's et al. (2014) study of 32 runners (14 female, 18 male), Schücker et al. hypothesized that applying internal attentional focus to automated processes (treadmill running) would result in a decrease of running economy as measured by VO_2 , respiratory rate, respiratory volume, ventilation rate, respiratory quotient, energy expenditure, and heart rate. The runners ran four 6-minute blocks (with 2 minutes rest inbetween) (Schücker et al., 2014). Prior to each block, the runners received an attentional focus cue (total of 3 cues, and no-cue for control) (Schücker et al., 2014). One cue was to pay attention to breathing in and out; another cue was to pay attention to the feet and forward movement of the legs; and the remaining cue was to pay attention to how the body was feeling (e.g. perceived effort) (Schücker et al., 2014). Schücker et al. (2014) found that running economy decreased when the runners were cued to direct their attention to their breathing and feet/legs (both automated processes); running economy was the same for the control cue and body-feeling cue (Schücker et al., 2014). Schücker's et al. (2014) study seemed to support the theory that internal attentional focus detracted from performance by interfering with the automaticity of movement patterns/skills at the mastery level. Internal attentional focus may be more appropriate for the learning or correctional phases. External attentional focus may be more supportive of performance.

Both Schücker's et al. (2014) and Becker and Smith's (2015) studies may be improved by a greater sample size, varying the skill levels, and lengthening the study with more sampling points. As a coach, it is important to know how and when to cue an athlete.

References

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